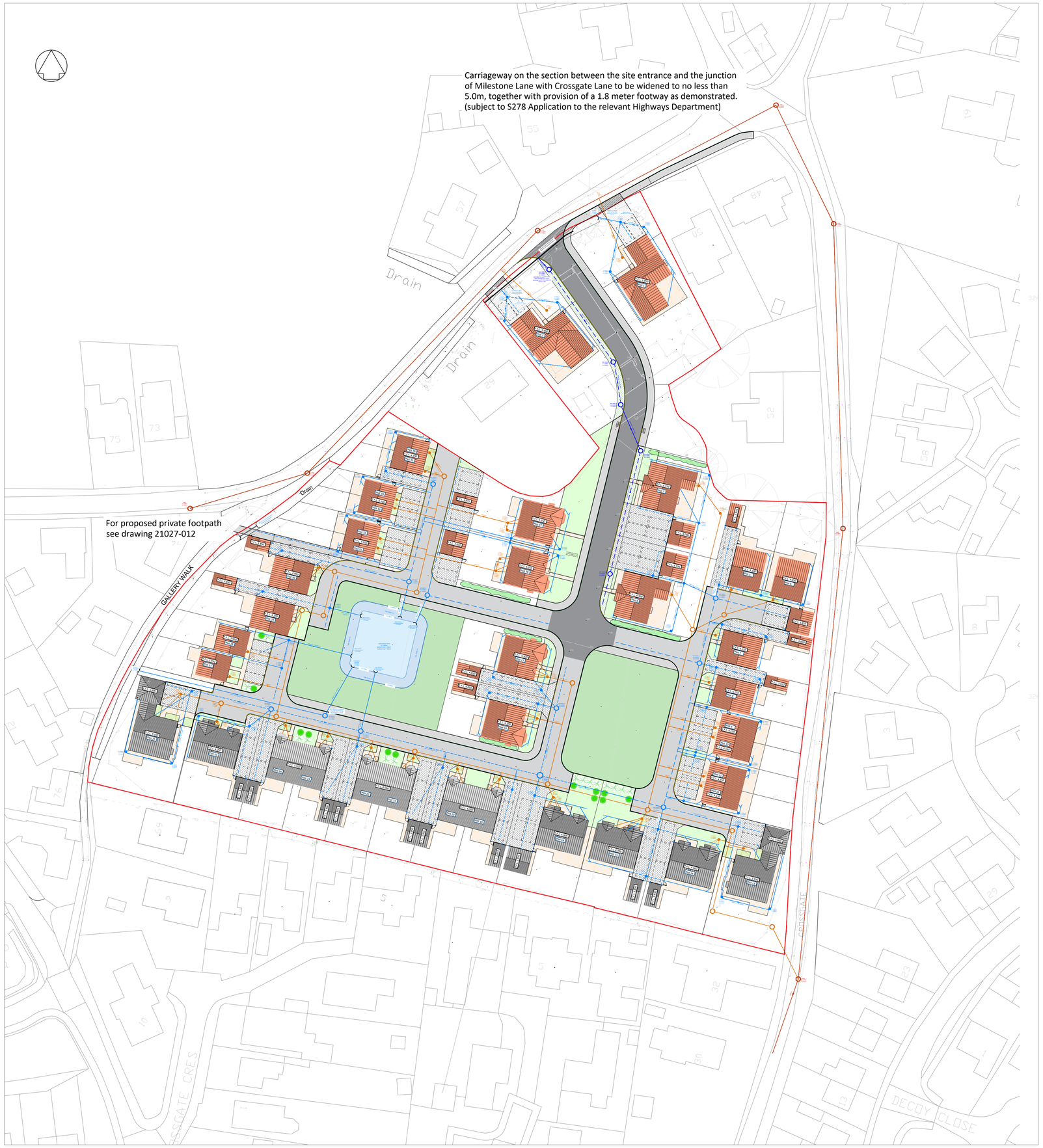


Summary of Drainage Strategy

Storm Water

- The site is located off Milestone Lane, Pinchbeck, Spalding. The postcode for the site is PE11 3XR and the approximate center of the site at National Grid Reference is TF 24240 26600.
- The site size is 1.88 ha. The proposed buildings cover an area of 2970m²
- A private drainage system 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
- Driveways to be surfacing in permeable tarmac discharging to the storm water system. A grit layer shall be provided to filter storm water before entering the system.
- Storm water attenuation shall be provided in Type 3 subbase below the permeable parking spaces, the roads as well as in the pond as demonstrated in the drawing
- A Hydrobrake (MH-0021-S) will control discharge at a rate of 2.4 l/s for the private development
- Plots 1 & 2 shall form individual sub-catchments each one of which will include an Orifice Plate limiting discharge to 0.1 l/s
- A culvert is proposed to be built along the entrance of the site at the western boundary to allow for the site access construction
- Discharge rate for the whole site has been limited at Qbar=2.6 l/s
- The proposed system will discharge into the existing ditch located at the western side of the site
- The adoptable storm water system will drain onto filter drains. An Orifice plate will control discharge rate for the adoptable system to 5.0 l/s

For the Private System

- Attenuation Volume Provided in Pond: 240m³.
- Attenuation Volume Provided in Sub-base: 515m³
- Attenuation Volume used in 1 in 30 yrs storm event: 35%.
- Attenuation Volume used in 1 in 100 yrs storm event: 48%.
- Attenuation Volume used in 1 in 100 yrs storm event + 40% Climate Change : 72%

Foul Water

- A private Foul water system should be provided with effluent to a proposed Adoptable Manhole in Crossgate

Exceedence Flows

- Exceedence flows shall be routed as demonstrated in drawing 21027-011, without risk of flooding to any building.

	Drainage Hierarchy	Y / N	Comment
1	Infiltration to the maximum extent that is practical	N	Water table is high. Soakaways can't be utilised
2	Discharge to surface waters	Y	The proposed storm water system will discharge to the ditch at the west side of the site
3	Discharge to Surface Water Sewer	N	There are no existing surface water Manholes
4	Discharge to combined sewer (last resort)	N	No Combined Sewer exists

Management & Maintenace

The private drainage systems shall be managed by the facilities management company 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
Development Site Access Roads	Periodic sweeping to remove debris, leaves etc	Every 2-4 weeks during Autumn	Management Company
	Cleaning of Gullies	Recommended every 2-years	Management Company
Drainage Infrastructure	CCTV / Jetting of Sewers	Every 10-years	Management Company
	Repairs to sewers	As required	Management Company
Drainage System	Formal Inspection of entire system and removal of rubbish	Annual	Management Company to undertake in conjunction with
'On-plot' Hard-surfacing & Drainage	Blockwork paved areas to be swept and de-weeded	As required during Spring and Summer months	Management Company
	CCTV / Jetting of Sewers	Recommended every 10-years	Management Company
	Inspection of Manholes / Chambers	Recommended every 5-years	Management Company
	Spillages	Provision of Spill Kits to contain contaminants	Management Company
Building Roof Drainage	Gutters to be cleared of debris	Recommend every 2-years	Management Company
Building Foul Drainage	Cleaning of below ground pipework	Recommend every 10-years	Management Company

CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS 2015

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:

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NOTES

1. Do not scale this drawing.

2. All dimensions are in millimetres unless stated otherwise.

3. This drawing to be read in conjunction with all other relevant drawings and specifications.

4. All proprietary items to be installed in strict compliance with manufacturers instructions and recommendations.

STANDARD DRAINAGE NOTES:

1. 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.
2. 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)
3. 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.
4. Except where specifically shown otherwise, pipes to be a minimum of 900mm below roads/driveways and 600mm below gardens/fields.
5. 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.
6. Step-irons shall not be fitted in any chambers unless specified otherwise.
7. Manhole/Gully covers shall be regulated to suit finished levels and crossfalls
8. All proprietary items to be installed in strict compliance with manufacturers instructions and recommendations
9. 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.
10. 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
11. Unless labeled otherwise type 3 subbase below permeable car parking spaces to be 350mm
12. Permeable driveways for Plots 28-41 to include at least 150mm of type 3
13. Unless labeled otherwise pipes to be PVC of 100mm Dia
14. Pipes downstream Road gullies to be PVC of 150mm Dia
15. Setting out points to be at the front face of the kerb
16. Permeable Paving and subbase tanked against house with Eco Flex underground drainage geomembrane, impermeable geotextile or similar

STANDARD ROADS / FOOTPATH NOTES:

1. 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.
2. All formations are to be treated with an approved herbicide before placing sib-base material on a geotextile separation membrane (Terram 1000 or similar approved)
3. All sub-base material is to be non-frost-susceptible. All concrete to be sulphate resisting

P5	Site name changed	ZEK	25.03.21

Client

Postland Management Ltd

Project

The Burrells
Milestone Lane
Pinchbeck

Title

Drainage Strategy

Job No 21027

Drawing No 21027-010 Rev P5

Status Preliminary

Scale 1:500 Date 23.02.21

Project Engineer TBP

Drawn By ZEK

Checked By TBP

Approved By

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