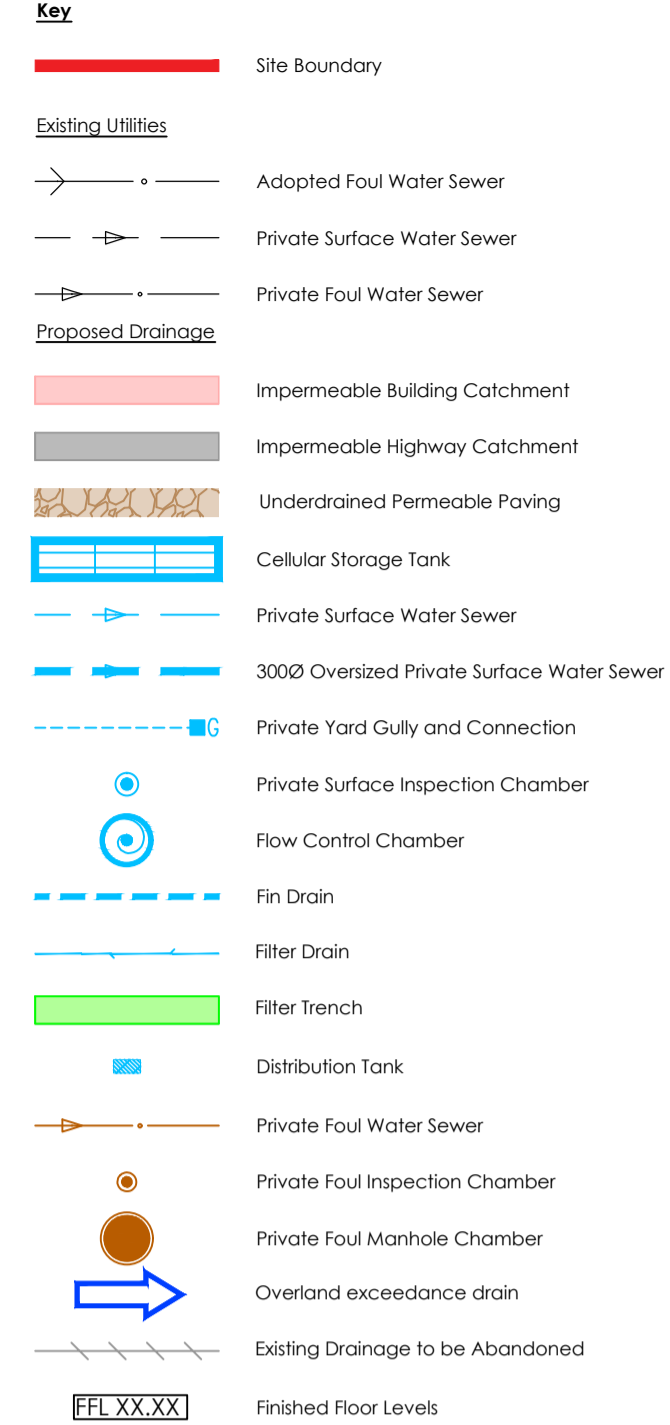


- Notes:**
- The proposed development has been assessed in line with the National Planning Policy Framework, to allow the planning application to be progressed and to show that the development can be undertaken in an acceptable manner from a flood risk perspective.
 - The proposed development is located within Flood Zone 1 and is not known to be susceptible to flooding from pluvial, groundwater, infrastructure or surface waters.
 - To ensure the development is safe throughout its lifetime, the surface water strategy accounts for runoff in up to the 1 in 100 year return period.
 - The strategy also safeguards against climate change (40%), providing betterment over existing conditions, where the rate and volume of runoff would continue to increase due to climate change.
 - The existing site comprises made ground and is likely to be a risk of elevated groundwater which might preclude the use of infiltration drainage. For the purposes of this SWMH it is considered that surface water runoff will be attenuated on-site and discharged to the nearest and most appropriate receiving system.
 - At the discharge of conditions stage and to inform detailed design of the final drainage scheme, it is recommended that a ground investigation is completed and wherever practicable infiltration drainage is promoted.
 - The peak rates of runoff will be limited as close to greenfield as practicable, based on a minimum 100mm diameter flow control.
 - Runoff from the tank and under-drained permeable paving will pass through a new flow control chamber prior to discharging to the existing network via the existing site connection. This will be subject to a CCTV condition survey.
 - The proposed development achieves a substantial betterment compared to existing site conditions, as peak rates of discharge are limited to just 5.9 l/s peaks in the 100 year return period storm with 40% climate change, compared to over 172 l/s from the existing brownfield site (97% betterment).
 - The proposed under-drained permeable paving and cellular attenuation will offer sufficient SuDS mitigation to offset the pollution indices for the site, in accordance with CIRIA C753.
 - The impermeable drained catchment will reduce through the development, also reducing the volume of runoff from the site.
 - Beyond the 100-year critical storm, exceedance runoff will be directed towards any residual areas of open space and/or car parking, where any aboveground storage can be utilised.
 - Foul flows generated by the proposed development will be served by the new private gravity network, tying into an existing connection to the Anglian Sewer foul sewer network.
 - All on-site proposed drainage will remain private and will be designed in accordance with Building Regulations Part H and CIRIA C753 and will become the responsibility of the building operator.
 - As the development will be safe from flooding throughout its lifetime and will actively reduce the flood risk to properties within the downstream catchment, it is recommended that the Local Planning Authority confirm they have no objections to the proposed development.



Area Summary Schedule

Exist. Impermeable Catchment	0.302 ha
Net Developable Area	0.302 ha
Prop. Impermeable Catchment	0.185 ha
Prop. Percentage Impermeable	61%

Equivalent Greenfield Runoff Rates

The greenfield runoff rates have been assessed for the net developable area using the FEH Method. The calculation excludes large areas of open space which will remain undeveloped.

Return Period	Greenfield Rate (l/s)
2yr	0.14
30yr	0.38
100yr	0.56

Attenuation Summary

Complex Attenuation Feature:

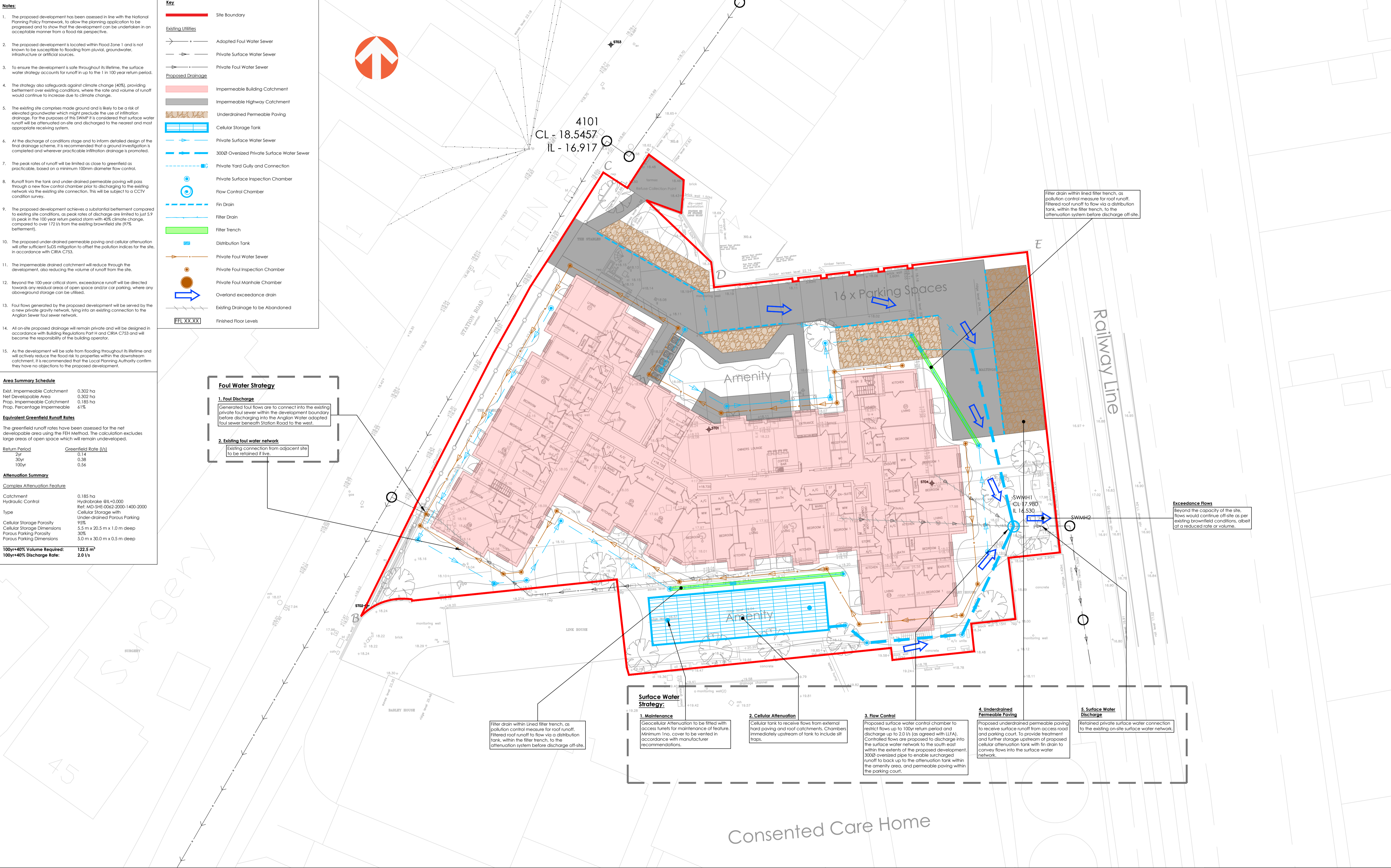
Catchment	0.185 ha
Hydraulic Control	Hydrobrake @IL+0.000 Ref: MD-SHE-0062-2000
Type	Cellular Storage with Under-drained Porous Parking
Cellular Storage Porosity	93%
Cellular Storage Dimensions	5.5 m x 20.5 m x 1.0 m deep
Porous Parking Porosity	30%
Porous Parking Dimensions	5.0 m x 30.0 m x 0.5 m deep

100yr+40% Volume Required:	122.5 m³
100yr+40% Discharge Rate:	2.0 l/s

Foul Water Strategy

1. Foul Discharge
Generated foul flows are to connect into the existing private foul sewer within the development boundary before discharging into the Anglian Water adapted foul sewer beneath Station Road to the west.

2. Existing foul water network
Existing connection from adjacent site to be retained if live.



- Surface Water Strategy:**
- 1. Maintenance**
Geocellular Attenuation to be fitted with access tunnels for maintenance of feature. Minimum 1no. cover to be vented in accordance with manufacturer recommendations.
 - 2. Cellular Attenuation**
Cellular tank to receive flows from external hard paving and roof catchments. Chambers immediately upstream of tank to include silt traps.
 - 3. Flow Control**
Proposed surface water control chamber to restrict flows up to 100yr return period and discharge up to 2.0 l/s (as agreed with LFA). Controlled flows are proposed to discharge into the surface water network to the south east within the extents of the proposed development. 3000 oversized pipe to enable surcharged runoff to back up to the attenuation tank within the amenity area, and permeable paving within the parking court.
 - 4. Underdrained Permeable Paving**
Proposed underdrained permeable paving to receive surface runoff from access road and parking court. To provide treatment and further storage upstream of proposed cellular attenuation tank with fin drain to convey flows into the surface water network.
 - 5. Surface Water Discharge**
Retained private surface water connection to the existing on-site surface water network.

Filter drain within lined filter trench, as pollution control measure for roof runoff. Filtered roof runoff to flow via a distribution tank, within the filter trench, to the attenuation system before discharge off-site.

Exceedance Flows
Beyond the capacity of the site, flows would continue off-site as per existing brownfield conditions, albeit at a reduced rate or volume.

Consented Care Home

REV	DATE	DESCRIPTION	BY	CHK	APD
D	23.05.2022	ADDITIONAL POLLUTION MITIGATION MEASURES	RF	LB	CPY
C	18.01.2021	PLANNING COMMENTS CONSIDERED	VGS	LB	CY
B	10.11.2021	UPDATED LAYOUT AND DRAINAGE TO SUIT	RF	LB	CY

CLIENT: CHURCHILL RETIREMENT LIVING

DRAWING STATUS: PLANNING APPLICATION

PROJECT: STATION ROAD, GREAT SHELFORD

TITLE: PRELIMINARY DRAINAGE LAYOUT

PROJECT No: 1281

DRAWING No: 01-PDL-1001

REV: D

SCALE @ A1: 0 1:200 10 metres

DESIGN BY:

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