

**CONCEPT DESIGN STAGE
DRAINAGE MANAGEMENT AND MAINTENANCE PLAN

FOR

NEW CARE HOME

AT

199 – 203 HENLEY ROAD
CAVERSHAM
READING RG4 6LJ

FOR

SIGNATURE SENIOR LIVING**

Project No: SIG029
Date: April 2020
Version: 1.0

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Revision	Originator	Comments	Date issued
1.0	Colin Pollard	First issue	17/04/2020
2.0	Andra Reblean	Revised issue	30/06/2020

1.0 Introduction

- 1.1 Planning for maintenance is included at design stage to ensure the following:
- appropriate and permanent access to all points in the system where future maintenance may be required
 - appropriate pre-treatment systems to help trap sediment
 - appropriate provision for temporary drainage, if required, during sediment management or other maintenance activities
 - the availability of storage and disposal areas for green waste, such as grass cuttings and organic sediments.
- 1.2 In order to ensure the design objectives are carried forward throughout the life of the scheme an Operations and Maintenance Manual will be prepared. This will address the following matters:
- location of all SuDS components on the site
 - brief summary of the design intent, how the SuDS components work, their purpose and potential performance risks
 - depth of silt that will trigger requirement for removal
 - visual indicators that will trigger maintenance
 - depth of oil in separators etc that will trigger removal
 - maintenance requirements (i.e. the Maintenance Plan) and a maintenance record pro forma
 - explanation of the objectives of the maintenance proposed and potential implications of not meeting those objectives
 - identification of areas where certain activities are prohibited
 - an action plan for dealing with accidental spillages of pollutants
 - advice on what to do if alterations are to be made to a development or if service companies need to undertake excavations or other similar works that could affect the SuDS
 - details of whom to contact in the event that pollution is seen in the system or if it is not working correctly.
- 1.3 At this early design stage this Concept Design Stage Management and Maintenance Plan has been prepared and should form the basis of the final plan. Development of the final plan will be undertaken by the Care Home Management company in conjunction with the development design professionals and Main Contractor.

2.0 Site Description

- 2.1 The site is a steeply sloping site with Henley Road on the north boundary 11 metres above the Berry Brook on the southern boundary. This significant slope rules out the use of various at surface drainage control options such as swales. The underlying soils are chalk, and these are overlain by less permeable soils over the southern half of the site. The presence of chalk means soakaways are an option for infiltration drainage and have been adopted for draining the building roof, building access roads and hard surfaces and the adopted highway.
- 2.2 The landscape concept is shown on drawing B19010 / 102A prepared by The Landscape Partnership, a copy is included in Appendix A

3.0 Location of SuDS components on the site

- 3.1 There are three soakaways proposed on the site. The location is shown on drawing DR-00-02, a copy of which is in Appendix B. Note the drawing is a concept stage drawing and does not show all manholes and silt traps. These will be shown on the Construction Stage drawings.

4.0 Design intent of SuDS components - their purpose and potential performance risk

- 4.1 The soakaways infiltrate the rainwater into the chalk underlying the site. The soakaway will partially fill with water during storms and continue to soak into the ground following the end of the storm. While the half empty time is calculated to be less than 24 hours total retention periods are anticipated to exceed 24 hours. It is highly likely, and not a concern, that water will remain in the base of the soakaway permanently
- 4.2 The soakaway serving the building is provided with overflow pipes to allow excess water to drain to the soakaway lower down the hill.
- 4.3 The soakaway for the adopted road does not have an overflow pipe to reduce the risk of hydrocarbon contaminants entering Berry Brook.

5.0 Visual indicators that will trigger maintenance

- 5.1 The soakaways are sized to cope with the vast majority of storms. If the overflows are frequently in use the upstream soakaway should be cleaned and silt removed.
- 5.2 The silt traps immediately preceding the soakaways should be visually inspected and silt removed periodically as part of the Care Home maintenance schedule.
- 5.3 Repair / replacement of any items from the Table 1 below should be made in accordance with the original design and keeping the same visual aspect.
- 5.4 The inspection frequency for below ground drainage items is shown in Table 1 below. Note that not all items will be present on site.

Table 1. Proposed Schedule of Maintenance for Below Ground Drainage

Item	Visual Inspection	Cleanse / De-sludge	CCTV Survey	Comments
Surface Water Drainage System (pipework, manholes etc.)	6 months	6 months or as often as required	10 years	Cleansing to be carried out as necessary
Flow control devices	1 year	As required		Cleansing to be carried out as necessary. As a minimum inspect after autumn leaf fall.
Gullies/Channels	1 year	1 year	N/A	Cleansing to be carried out as necessary
Catch pits	1 year	-	N/A	Cleansing to be carried out as necessary
Sediment filters	3 months		As required	Cleansing to be carried out as necessary
Permeable Block Paving	6 months	Swept clean of debris every 6 months or after	N/A	Lift blocks and remove sand bedding and replace and rebed paving – refer to individual

		large storm events.		manufacturers' recommendations.
Cellular storage and cellular soakaways	1 year		5 years	Cleansing to be carried out as necessary

6.0 Oil separators

- 6.1 There are no oil separators on site
- 6.2 The undercroft car park area and the paving in front of the entrance will be managed to prohibit car maintenance on site

7.0 Objectives of the maintenance

- 7.1 The principal objective is to keep the underground pipe drainage system clean and free running
- 7.2 In addition, paved surfaces should be kept free of large quantities of debris and leaf fall to reduce the debris load on the system.
- 7.3 Rainwater downpipes and roof outlets should be regularly inspected to control the quantity of debris and leaf fall entering the underground drainage system.
- 7.4 Soakaways should be maintained to ensure the infiltration rates are such that use of the overflow pipes is very infrequent.

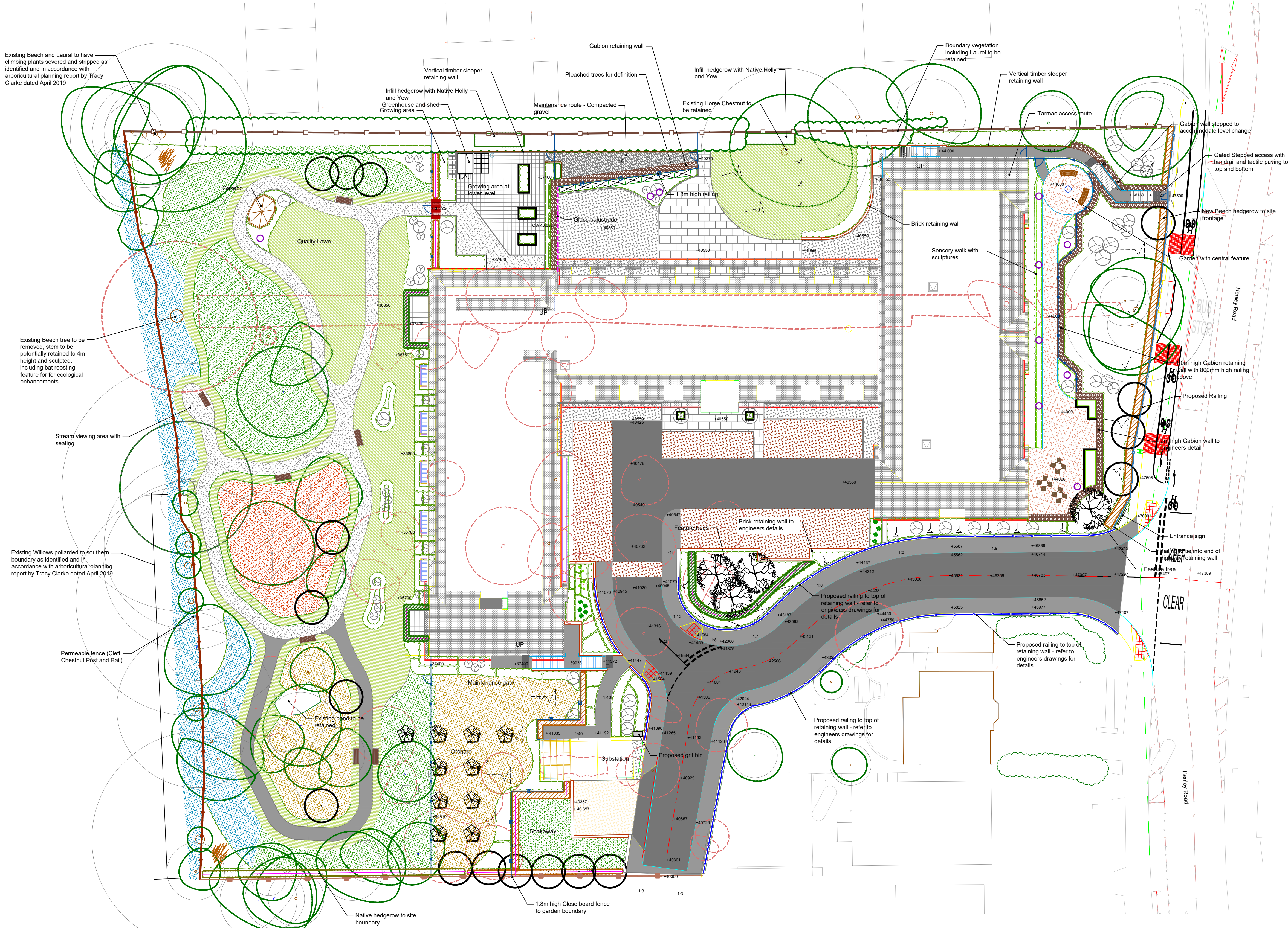
8.0 Prohibited activities

- 8.1 The surface water system must not be used to dispose of any non-aqueous liquids for example oil, petrol, paint, bleach, cleaning fluids etc.
- 8.2 Building materials and associated waste, for instance sand, cement, packaging materials etc. should be controlled to eliminate entry to the drainage system.
- 8.3 Landscape, maintenance materials and debris, for instance soil, grass cuttings, weeds and plant debris, should be controlled to eliminate entry to the drainage system.

9.0 Plan for dealing with accidental spillages of pollutants

- 9.1 The Environment Agency incident reporting telephone number, 0800 80 70 60, should be displayed prominently in the Maintenance Office.
- 9.2 The Reading Borough Council pollution incident reporting telephone number should be displayed prominently in the Maintenance Office.

APPENDIX A
Landscape Concept Plan



- Existing trees and vegetation to be retained with Root Protection Areas indicated
- Existing tree to be removed
- Proposed feature tree
- Proposed tree (Standard, ANS)
- Proposed Orchard trees.
- Proposed specimen shrubs
- Proposed pleached tree
- Proposed low-medium height shrub planting
- Proposed low-medium height sensory shrub planting (plants with high sensory attributes (e.g. Lavender, Lamb's Ears, Sage, Rosemary, Coneflower)
- Proposed Low Evergreen hedgerow
- Proposed Native hedgerow
- Proposed beech hedgerow
- Proposed amenity/mown grass (Frequently mown)
- Proposed regularly mown grass
- Proposed grass with Wildflowers for wet soils
- Proposed regularly mown grass with bulbs
- Proposed grass with wildflowers for semi shaded areas
- Proposed water feature
- Proposed garden sculpture/bird bath
- Proposed raised timber planters. Growing area in addition to contain secure compost bins and greenhouse and picnic benches.
- Proposed asphalt road construction to engineers details
- Proposed asphalt footpath construction to engineers details
- Proposed block paving
- Proposed resin bound surfacing
- Proposed feature paving
- Proposed tarmac with granite chippings to rear garden circulation path
- Proposed metal edge to Resin Bound path - Kinley ExcelEdge
- Proposed 50mm Edging (Flexible 101016 for curves and Rigid 101017 for straight runs)
- Proposed fixed timber seat with armrests and backrests
- Proposed non-fixed seating area with tables
- Proposed rose arch
- Proposed/existing slopes
- Proposed Hibernacula
- Boundary Treatment and internal fences/retaining walls
- Existing 1.8m high timber close board fence retained and repaired where required
- Proposed fence to top of retaining wall to engineers details
- Proposed timber cleft chestnut post and rail 1.2m high (Permeable along stream)
- Proposed metal anti-trap bow top railing, 1.6m and 1.8m high with secure pedestrian gates where indicated.
- Proposed 1m high Gabion retaining wall with 0.8m high railing above
- Proposed 1.2m metal anti-trap bow top railing to site frontage
- Proposed highway retaining wall and railing to Highway engineers details
- Proposed 1.3m glass balustrade above gabion retaining wall
- Proposed hand rails to steps
- Proposed brick retaining wall, to engineers details. (Height varies)
- Proposed Gabion retaining wall, to engineers details (Height varies)
- Proposed vertical timber sleeper wall, to engineers details
- Proposed levels

Rev A: Amendments follow Client comments and team coordination. DT 10.02.2020

Letter Revision By Date

Project
Henley Road, Caversham

Drawing
Landscape Proposals

Status
Tender

Do not scale off drawing. All dimensions & Levels are to be checked on site. Any discrepancies must be reported to the landscape architect immediately.
Copyright THE LANDSCAPE PARTNERSHIP LTD

the landscape partnership

Bedford 01234 261315
Woodbridge 01394 380509
London 020 3092 4141
Norwich 01603 230777

Job No. B19010

Dwg. No. 102A

Scale 1:250@A1

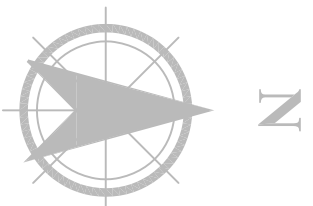
Drawn DT

Checked PW

Date 29.11.2019

North

APPENDIX B
Drainage Concept Plan



ROAD TO BE ADOPTED
ROAD DRAINAGE TO HIGHWAY AUTHORITY'S APPROVAL.
REFER TO PEP DRAWINGS & CSP ROAD DRAWINGS.
SECTIONS & DETAILS FOR ADDITIONAL INFORMATION.

INLET AND OVERFLOW INVERT LEVELS
TO BE SIMILAR. SOAKAWAY EXCAVATED
INTO CHALK. VOLUME BELOW INVERT LEVELS
TO BE SUFFICIENT TO ALLOW INFILTRATION
FROM SOAKAWAY TO EXCEED INFLOW FROM
1 IN 20 YEAR STORM.

SOAKAWAY AND FLOOD STORAGE TANK

ANY LOSS OF VOLUME IN FLOOD PLAIN DUE TO FILLING BELOW 36.82m
LEVEL MUST BE COMPENSATED WITHIN A STORAGE TANK.

EFFECTIVE STORAGE VOLUME OF STORAGE TANK TO BE ABOVE
WATER TABLE (ANTICIPATED TO BE 34.5m).

TANK TO BE IN PERMEABLE SOILS (SAND, GRAVEL OR CHALK).

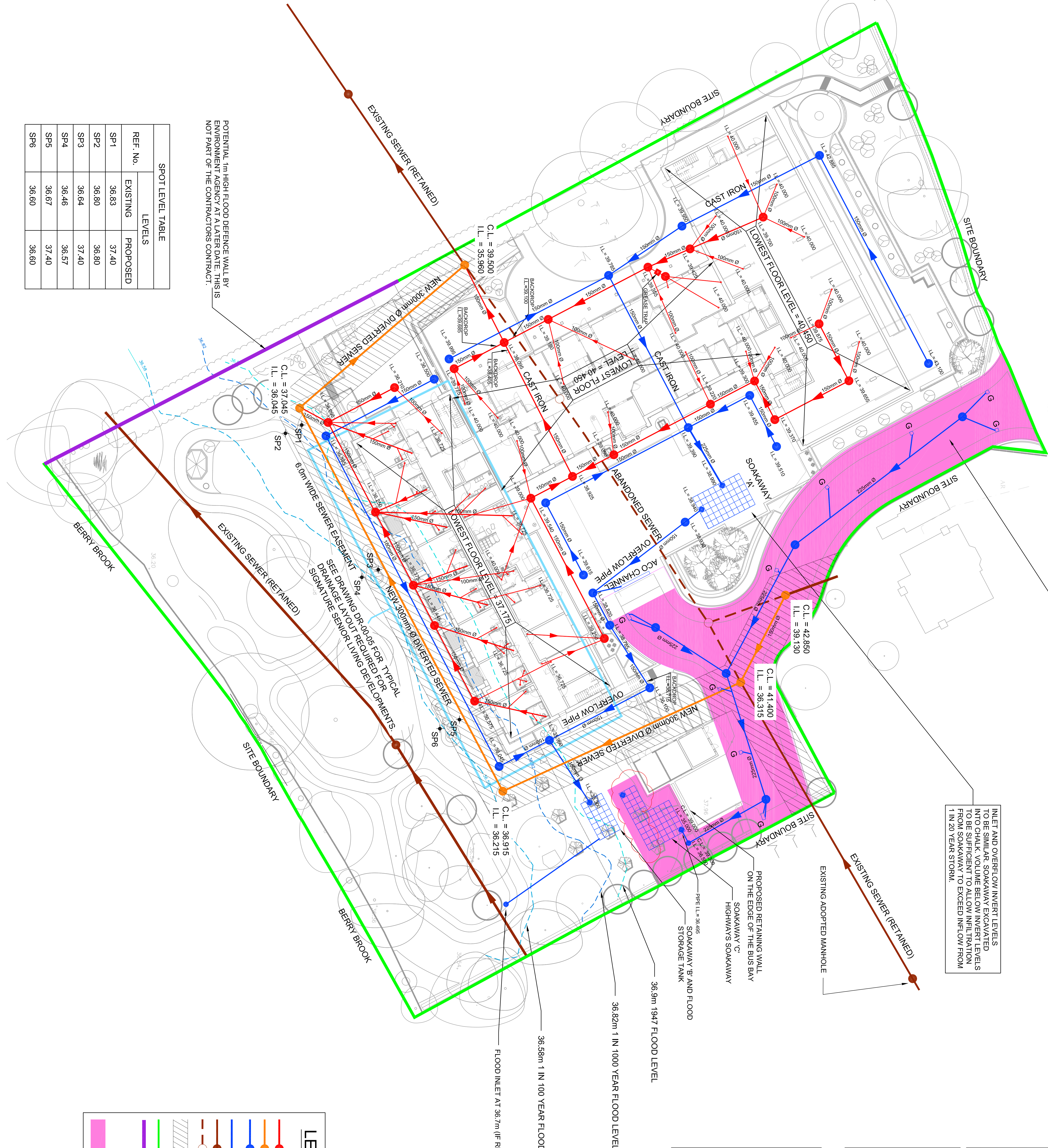
TANK TO HAVE MINIMUM 600mm FILL ON TOP.

NOTES:

- 1- THE CONTRACTORS ATTENTION IS DRAWN TO THE GENERAL NOTES
DRAWING AND SPECIFICALLY THE DRAINAGE NOTES.
- 2 - FOR DRAINAGE DETAILS REFER TO DRAWINGS DR-00-02 TO 05 AND
DR-NS-01 & 02.
- 3 - ALL HIGHWAY DRAINAGE IS TO BE ADOPTABLE STANDARDS.
- 4 - ALL MANHOLE COVERS TO BE GRADE D400.

SOAKAWAY SCHEDULE					
REF	PLAN AREA	DEPTH	BOTTOM LEVEL	TOP LEVEL	COVER LEVEL OF MH
A	34.5m²	2640	36.800	39.440	40.550
B	17.9m²	1980	33.770	35.750	36.800
C	36.4m²	1720	35.000	36.720	39.000

1. SOAKAWAY BASED UPON HYDRO STORMCELL WITH A SOAKAGE RATE OF 1.88E-05 FOR ALL SOAKAWAYS.



SPOT LEVEL TABLE		
REF. No.	LEVELS	
	EXISTING	PROPOSED
SP1	36.83	37.40
SP2	36.80	36.80
SP3	36.64	37.40
SP4	36.46	36.57
SP5	36.67	37.40
SP6	36.60	36.60

POTENTIAL 1m HIGH FLOOD DEFENCE WALL BY
ENVIRONMENT AGENCY AT A LATER DATE. THIS IS
NOT PART OF THE CONTRACTORS CONTRACT.

LEGEND

- NEW PRIVATE FOUL WATER DRAINAGE
- NEW PUBLIC FOUL WATER DRAINAGE (THAMES WATER)
- NEW PRIVATE SURFACE WATER DRAINAGE
- PROPOSED ROAD GULLEY
- EXISTING PUBLIC FOUL SEWER (RETAINED)
- EXISTING PUBLIC FOUL SEWER (ABANDONED)
- THAMES WATER EASEMENT ZONE
- SITE BOUNDARY
- EXTENT OF FLOOD DEFENCE WALL PROPOSED BY
ENVIRONMENT AGENCY. SEE (WWW.CONSU.LT.
ENVIRONMENT-AGENCY.GOV.UK/THAMES/READING-AND-
CAVERSHAM-FLOOD-ALLEVATION-SCHEME-INF/).
- ADOPTED ROAD

NOTES

1. ALL ADOPTABLE DRAINAGE WORKS TO BE
CONSTRUCTED AS DETAILLED IN SEWERS FOR
ADOPTION, 8th EDITION OR AS STIPULATED IN
THAMES WATER'S ADDENDUM.
2. TREES WITH MODERATE TO HIGH WATER DEMAND
AND LARGE SHRUBS TO BE LOCATED OUTSIDE
SEWER EASEMENT ZONE.
3. FINAL MANHOLE LOCATIONS AND INVERT LEVELS
SUBJECT TO DESIGN AND DEVELOPMENT.

Client

Project

199 - 203 HENLEY ROAD
CAVERSHAM, READING
RG4 6LJ

Title

FOUL & SURFACE WATER
DRAINAGE LAYOUT

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Job Number

DR-00-02

Rev

C2

Drawn

JAB

Check

DKC-19

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AMP

Job Number

DR-00-02

Revision

C2