

**Foul & Surface Water
Drainage Assessment**

**Craven Road,
Reading, RG1 5LF**

**McCarthy & Stone
2 Genesis Business Park
Albert Drive
Woking, Surrey
GU21 5RW**

October 2017

Third Issue



Such·Salinger·Peters

CONSULTING ENGINEERS

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Second Issue	14/03/2016	
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1	Amit Rabheru

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GENERAL NOTES

1. This report is provided as an assessment only, in the context of the stated development proposals and should not be used in a different context.
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5. New information, improved practices and legislation may necessitate an alteration to the report in whole, or in part, after its submission. Therefore with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to Such Salinger Peters Limited for re-assessment and, if necessary, re-appraisal.

1. Introduction

- 1.1 McCarthy and Stone Ltd are planning to construct a block of 25 retirement flats consisting of 3 one bedroom and 22 two bedroom flats with associated parking spaces. Currently occupied by an NHS Children with disabilities Centre located on the corner of Craven Road and Earleigh Road, in the town of Reading, RG1 5LF.
- 1.2 Prior to purchase Such Salinger Peters have been instructed to investigate the foul and surface water drainage options for the site.
- 1.3 The foul sewer arrangements and surface water drainage options have been investigated and are presented in this report.
- 1.4 The existing services have also been investigated using utility records provided by McCarthy & Stone Ltd, and are presented in this report.

2. Consultants' Brief

- 2.1 Such Salinger Peters were instructed by McCarthy & Stone Ltd to review the information supplied to them, to assess what further information was required, to carry out the necessary investigations and to report on the available options for foul and surface water drainage for the site.
- 2.2 The brief requires that the existing drainage arrangements be surveyed in order to prove the entitlement to connect the proposed development to the public sewerage system.
- 2.3 The output requirements of the work were for Such Salinger Peters to produce a report on the options available for foul and surface water drainage.

3. Existing Information

3.1 McCarthy & Stone Developments Ltd provided the following drawings and information:

Promap	Extract map showing site location
Prospaplans Ltd	Topographical Survey June 2015
Premier Energy	Utility Record Search
Thames Water	Existing Sewer Map
McCarthy & Stone Ltd.	Proposed Layout Sketches

3.2 The existing drainage was investigated during a site visit in July 2015 which established those parts of the site draining to the existing foul and surface water system, the site is shown on the location plan in Appendix 3.

3.3 The land for the proposed development is situated on the roundabout junction of Craven Road, which forms the west boundary, and Erleigh Road which forms the north east boundary of the site.

3.4 The Thames Water sewer record shows both surface and foul public sewer systems in the vicinity of the site.

3.5 The site is currently used as a NHS Learning Centre for children with disabilities, Family Planning Clinic and community Nursing Centre.

3.6 The site is approximately 3324m² with an impermeable area of 2058m² and thus results in the site being approximately 62% impermeable.

3.7 The site is falling from south east to north west with roughly a 1.3m difference across the site with the highest level at 45.38mAOD.

3.8 The site lies within Flood Zone 1 on the Environment Agency Flood Map (very low risk of flooding). The development is therefore classed as being at low risk of flooding from rivers and the sea.

4. Existing Drainage

- 4.1 Thames Water sewer records (Appendix 1), show the public Surface Water Sewers running down both Craven Road as a 225Ø and Erleigh Road shown as a 300Ø joining at the roundabout junction and continuing down Craven Road.
- 4.2 Thames Water sewer records (Appendix 1), also indicates an existing 300Ø public Foul Water Sewer running down both Craven Road and Erleigh Road joining at the roundabout junction and continuing down Craven Road.
- 4.3 With reference to Appendix 2, the foul water discharges from the site into private manhole referenced FW MH5 (Appendix 4) just inside the boundary on Craven Road and it is assumed to connect to the existing 300mmØ public Foul Sewer in the highway. Manhole referenced FW MH4 was entirely blocked and a connection to the public Foul Sewer could not be proven. During the site visit, a confirmed connection from site to the public Foul Sewer could not be established.
- 4.4 The Thames Water sewer records are shown in Appendix 1.
- 4.5 The existing drainage on the site is shown in Appendix 2.
- 4.6 The nearest watercourse is located approximately 500 meters away to the north of the site boundary.

5. Foul Water Drainage

- 5.1 There is a 300mmØ foul sewer running outside the west boundary of the existing property.
- 5.2 Without the initial designs providing a FFL it is assumed that a gravity connection into the existing foul system outside the north west boundary is possible.
- 5.3 The foul water from the new development should be connected to the existing public foul sewer in Craven Road.
- 5.4 A Developer Enquiry from Thames Water will be required to see whether the system has capacity to cope with the proposed development. The proposed discharge rate from the re-development is calculated to be $(3 \times 1.25 \times 180) + (22 \times 1.5 \times 180) = 0.07 \text{ l/sec}$.

Foul Water Recommendations

- 5.5 Once the proposed building layout and levels are finalised, prepare an outline drainage design.
- 5.6 Further drainage investigation required to determine invert levels in the Public Foul sewer running in Craven Road and Erleigh Road.
- 5.7 A jetting and CCTV survey is recommended to establish the feasibility of re-using the existing connection points.
- 5.8 A Developer Enquiry and Section 106 will be required prior to connecting to the public system.

6. Surface Water Drainage

- 6.1 The sewer records indicate an existing 225mmØ public Surface Water Sewers running down both Craven Road as a 225Ø and Erleigh Road shown as a 300Ø connecting on the roundabout junction (located north of the site) and continuing northward down Craven Road.
- 6.2 From the site visit, the older buildings along the front boundary line of Craven Road are draining into the existing foul sewer which runs through the site and out into Craven Road via a 100mmØ pipe.
- 6.3 The static mobile units located at the back of these buildings are going to a separate catch pit located in the car park, referenced SW MH3 and out towards the centre of the private car park.
- 6.4 Car park (approx. 836m²) has no gullies/channels but falls into the northern corner of the site, where a dense shrubbery area (approx. 250m²) has been located as a low spot.
- 6.5 The preferred method of surface water drainage would be through the use of soakaways, the site Investigation Report indicates there is a possibility soakaways will not work. Infiltration tests will be required to ascertain the viability of draining to soakaways for the proposed development.
- 6.6 If soakaways prove to be non-viable, a connection to the existing 225mmØ surface water drainage system in Craven Road will be required. This connection is likely to require some form of attenuation, typically with a discharge of 5 to 7.5l/sec depending on developer enquiry response.

Surface Water Recommendations

- 6.7 Commission soakaway tests to BRE365 standard to confirm their viability.
- 6.8 Once the building layout and levels are finalised, prepare an outline drainage design.
- 6.9 CCTV to determine if the private catchpit for the surface water sewer goes to a soakaway or the Public Sewer in Erleigh Road.
- 6.10 A Developer Enquiry and Section 106 will be required prior to connecting to the public system.

7. Conclusions & Recommendations

- 7.1 McCarthy & Stone Ltd are planning to build a block of 25 retirement apartments on a site currently unoccupied at Craven Road, Reading RG1 5LF.
- 7.2 Such Salinger Peters have undertaken an assessment of the existing foul and surface water draining from the site. This has proven that the site has an existing connection to the public Foul Sewer via FW MH5 located inside the western boundary of the site.
- 7.3 Approximately 705m² of impermeable surface water area has been proven to go into the existing foul sewer system from this site.
- 7.4 The existing foul sewer connection is via a 100mmØ pipe.
- 7.5 Proposals are to discharge foul flows to a newly located lateral manhole within the site boundary and have a new 150mmØ connection into the Public Sewer located in Craven Road, following a developer enquiry for the system.
- 7.6 Developer Enquiry for both systems will be required if soakaways are not feasible, a Section 106 application will be required by Thames Water prior to making connection into the public system.
- 7.7 A discharge to the River Kennet will need to be investigated if all other options for discharge of the surface water are ruled out.

Foul Water Recommendations

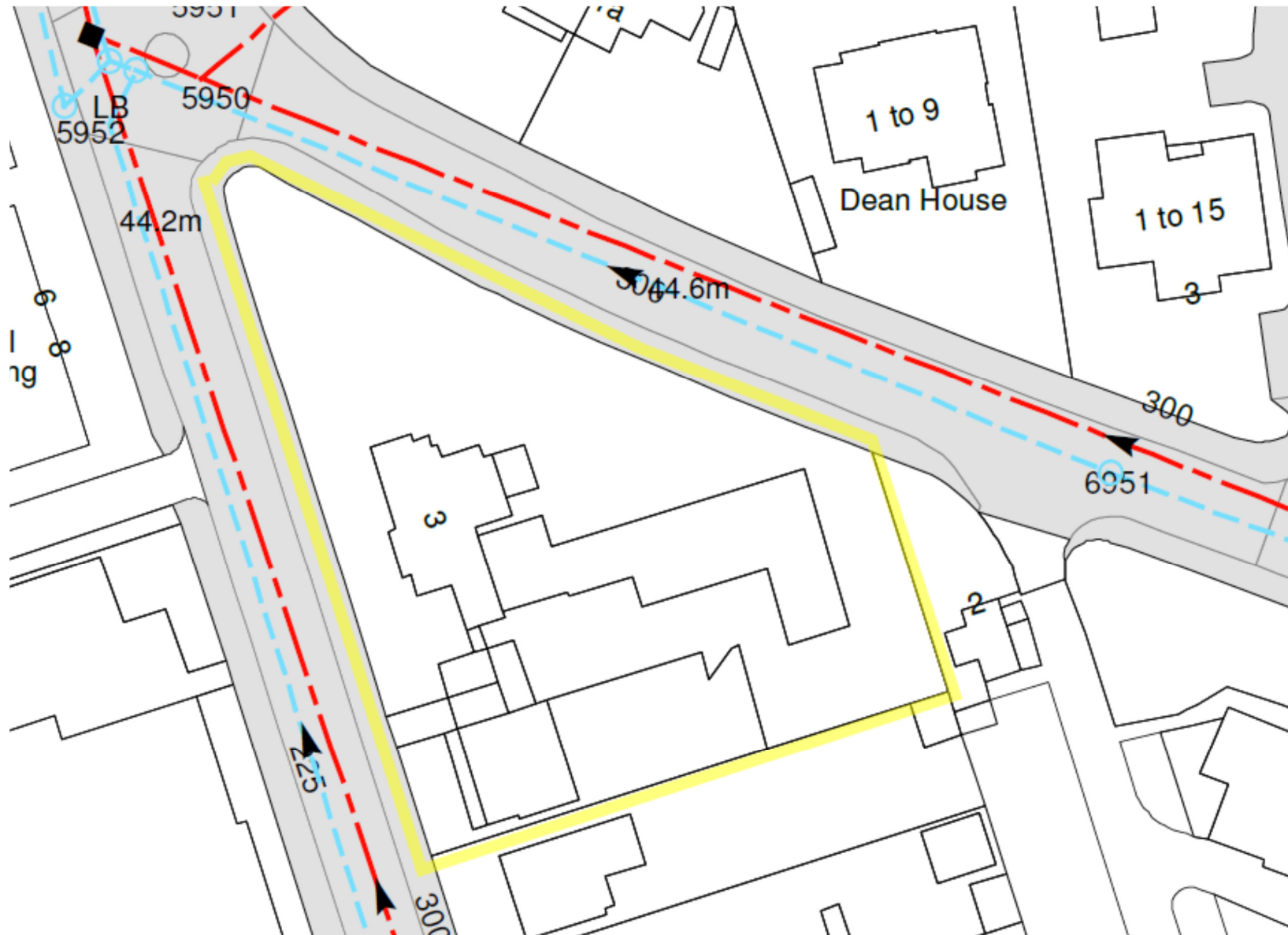
- 7.8 Once the proposed building layout and levels are finalised, prepare an outline drainage design.
- 7.9 Jetting and CCTV survey of possible existing laterals.

Surface Water Recommendations

- 7.10 Commission soakaway tests to BRE365 standard to confirm their viability.
- 7.11 CCTV from catchpit to determine if a connection exists into the public Surface Water Sewer or a soakaway under the car park.
- 7.12 Once the building layout and levels are finalised, prepare an outline drainage design.

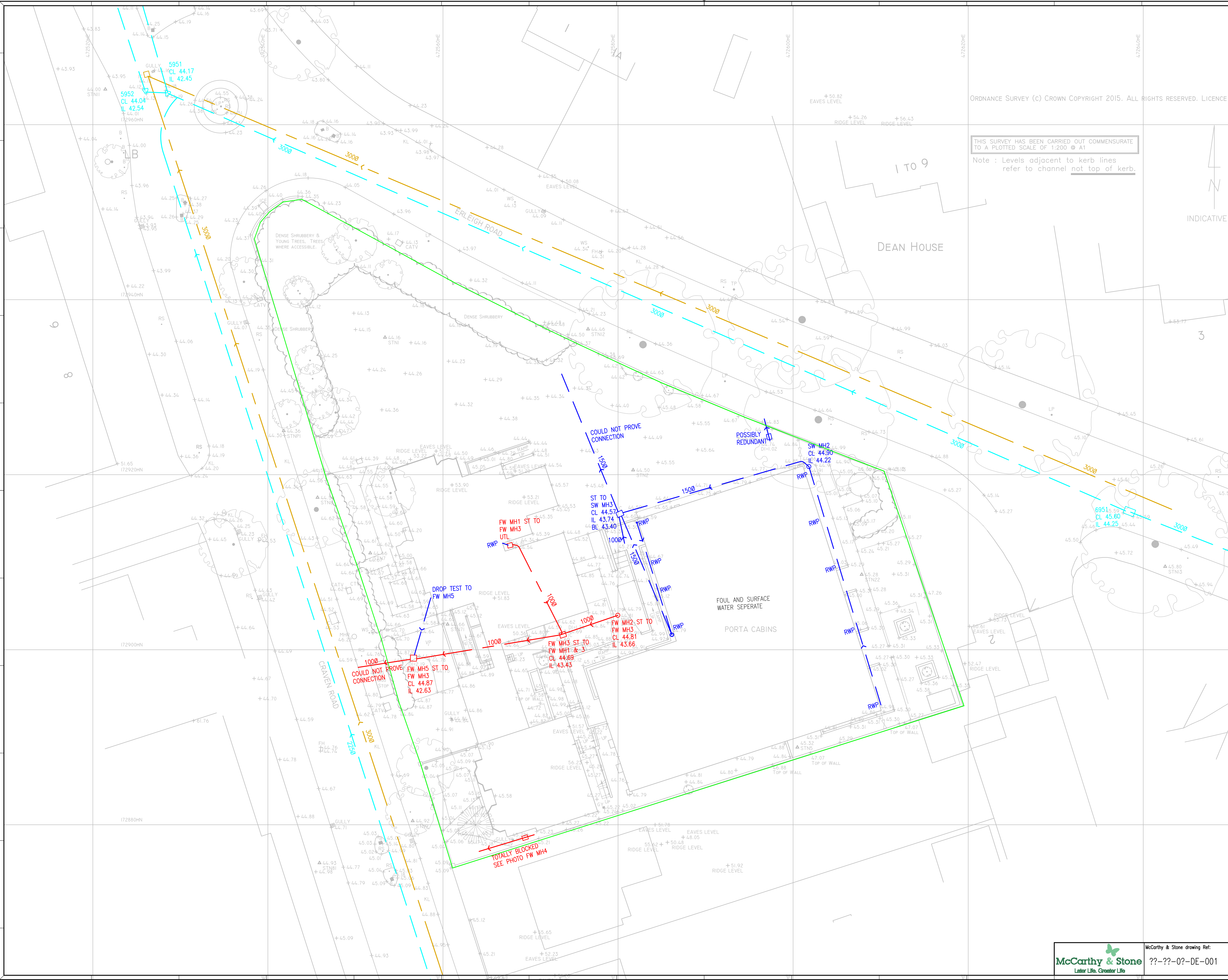
Appendix 1

Thames Water Sewer Record plan



Appendix 2

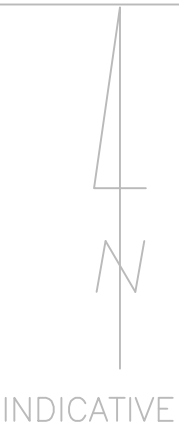
Existing Drainage on Topographical Survey



- NOTES:
- 1. ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
 - 2. ALL LEVELS IN METRES ABOVE ORDNANCE DATUM.
 - 3. APPLICATION AND APPROVAL FOR CONNECTION IN LINE WITH SECTION 106 OF THE WATER INDUSTRY ACT 1991 REQUIRED PRIOR CONNECTION WORKS.

THIS SURVEY HAS BEEN CARRIED OUT COMMENSURATE TO A PLOTTED SCALE OF 1:200 @ A1

Note : Levels adjacent to kerb lines refer to channel not top of kerb.



PRELIMINARY
DRAWING ONLY

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F				
E				
D				
C				
B				
A				
—	FIRST ISSUE	PP	NYC	NM
MK	REVISIONS	DRN	CHK	DATE



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CLIENT
McCarthy and Stone Retirement Living Ltd.

PROJECT
Craven Road Reading

DRAWING TITLE
Existing Drainage

SCALE 1 : 200 © A1 size	DATE 17/07/2015
DRAWING No. 50924-02	DESIGNED PP
	CHECKED KM
	REVISION —



McCarthy & Stone drawing Ref:
??-??-0?-DE-001

Appendix 3

Site Location Map, 3-5 Craven Road, Reading, RG1 5LF



Ordnance Survey © Crown Copyright 2015. All rights reserved. Licence number 100022432. Printed Scale - 1:75000

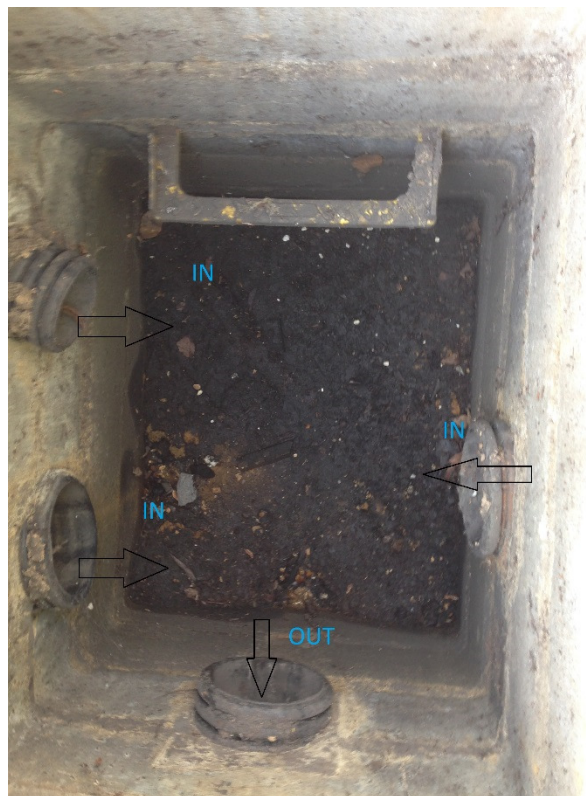
LOCATION MAP

Appendix 4

Photographs



MH F5, Last Foul manhole onsite



MH S3, Last SW manhole / catchpit onsite

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