

Project: CHY01

TIMMINSENGINEERING
DESIGN SERVICES



24th May 2022

Dear Ms Swan,

Site: 50-56 Creek Road, Hayling Island, PO11 9RE

I was appointed by you to provide drainage advice with regard to the site at 50-56 Creek Road, Hayling Island in March of this year. Specifically, my advice was to enable the HBC Planning Officer to discharge planning condition 4 of permission APP/19/00279 which was issued on 14th January 2020.

The relevant Condition states:

No development hereby permitted shall commence until plans and particulars specifying the layout, depth and capacity of all foul and surface water drains and sewers proposed to serve the same, and details of any other proposed ancillary drainage works/plant (e.g. pumping stations) have been submitted to and approved in writing by the Local Planning Authority. Unless agreed otherwise in writing by the Local Planning Authority, the development hereby permitted shall not be brought into use prior to the completion of the implementation of all such drainage provision in full accordance with such plans and particulars as are thus approved by the Authority.

Reason: *To safeguard the amenities of the locality and ensure that all such drainage provision is constructed to an appropriate standard and quality and having due regard to policies and proposals CS16 and DM10 of the Havant Borough Local Plan (Core Strategy) 2011 and the National Planning Policy Framework.*

You advised to me that the development would retain the existing ground floor structure and would comprise a new first floor structure containing living accommodation to be erected onto the existing building. As such, the existing drainage network and the internal connections into those drains would be retained.

Since there were no records at the time of our appointment of the location and alignment of the existing drainage system, I recommended that a CCTV Survey of the below-ground drainage be undertaken. The drains were surveyed on 15th March and their report is appended to this letter.

The CCTV survey revealed that the drainage system is wholly to the rear of the property. Rainwater from the flat roof and foul flows from the toilets and kitchens drain to the same pipework which conveys drainage in a southerly direction, connecting to a manhole located outside of your site.

The depths of each manhole were measured by the CCTV survey team, as were the pipe diameters, and unsurprisingly, the system is quite shallow in nature with gradients which are close to around 1:80 which can be expected for a drainage network serving a single property.

The existing drainage system appears to serve a kitchen area at the north end and toilets at the south end. The proposed development proposes to maintain these sanitary units at ground floor level and to add more sanitary units serving two new apartments at first floor level. From the plans submitted during the planning stage, these new appliances are expected to be a toilet, wash-basin, shower, bath, washing machine, kitchen sink and a dishwasher.

With reference to BS12056:2, it is possible to calculate the flow rate into the drainage system allowing us to compare the expected flow rates pre- and post-development.

<u>Pre-development Sanitary Units</u>		<u>Post development sanitary units</u>	
<u>Ground Floor</u>	<u>Discharge Units (DU)</u>	<u>Ground Floor</u>	<u>Discharge Units (DU)</u>
Kitchen sink	0.8	Kitchen sink	0.8
Toilet	2.0	Toilet	2.0
Wash-basin	0.5	Wash-basin	0.5
		<u>First Floor</u>	
		Kitchen sink x2	1.6
		Toilet x2	4.0
		Wash-basin x2	1.0
		Shower x2	1.2
		Bath x2	1.6
		Washing Machine	1.6
Sum of DU	3.3	Sum of DU	14.3

To calculate the foul flow rate, BS12056 recommends the following equation:

$$Q_{ww} = K\sqrt{\Sigma DU}$$

where:

Q_{ww} = Waste water flowrate (l/s)
 K = Frequency factor
 ΣDU = Sum of discharge units

Applying a Frequency Factor of 0.5 for 'Intermittent use' (e.g. in a dwelling) results in the following:

Pre-development flowrate:	Post-development flowrate:
$Q_{ww_{pre}} = 0.5 \cdot \sqrt{3.3}$	$Q_{ww_{post}} = 0.5 \cdot \sqrt{14.3}$
= 0.91 l/s	= 1.89 l/s

Assessing surface water flows from the roof:

Building Roof Area = 180sqm currently it drains to the rear of the site from the flat roof.

Applying a rainfall runoff rate of 0.14 l/s/sqm (Building Regulations H3 3.8)

Design pre-development flow-rate = $180 \times 0.014 = 2.52$ l/s.

Therefore;

Total predevelopment flow through the drains = $0.91 + 2.52 = \mathbf{3.43}$ l/s.

Post-development:

50% of the roof will drain to the existing drains (the remainder will drain via a new connection to the surface water drain running along the northern boundary of the building).

Therefore;

Design post-development flow-rate = $90 \times 0.014 = 1.26$ l/s.

Total post-development flow through the drains = $1.89 + 1.26 = \mathbf{3.15}$ l/s.

The post-development flow rate through the existing drains is marginally more than the pre-development flow rate, reflecting the intensification of use at the site balanced with the reduction in surface water runoff to the existing drain.

By inspection of diagram 3 in Building Regulations H3, the capacity of a 100mm diameter drain at a 1:80 gradient is about 5.7 l/s and so the pre- and post-development flow rates are less than the capacity of the drain.

A plan of the drainage system at the site is appended to this letter. It shows the existing drainage system serving the building and it is proposed that this is to remain in situ. The only change proposed is to make a new connection from the new rainwater pipe to the front of the building since the new roof pitches to north and south, whereas the existing roof is flat and only drains to the north.

The calculations above demonstrate that the expected flow rates can be accommodated within the existing drainage system serving the building thus ensuring that the provisions of policies DM10 and CS16 shall be complied with.

Yours Sincerely,

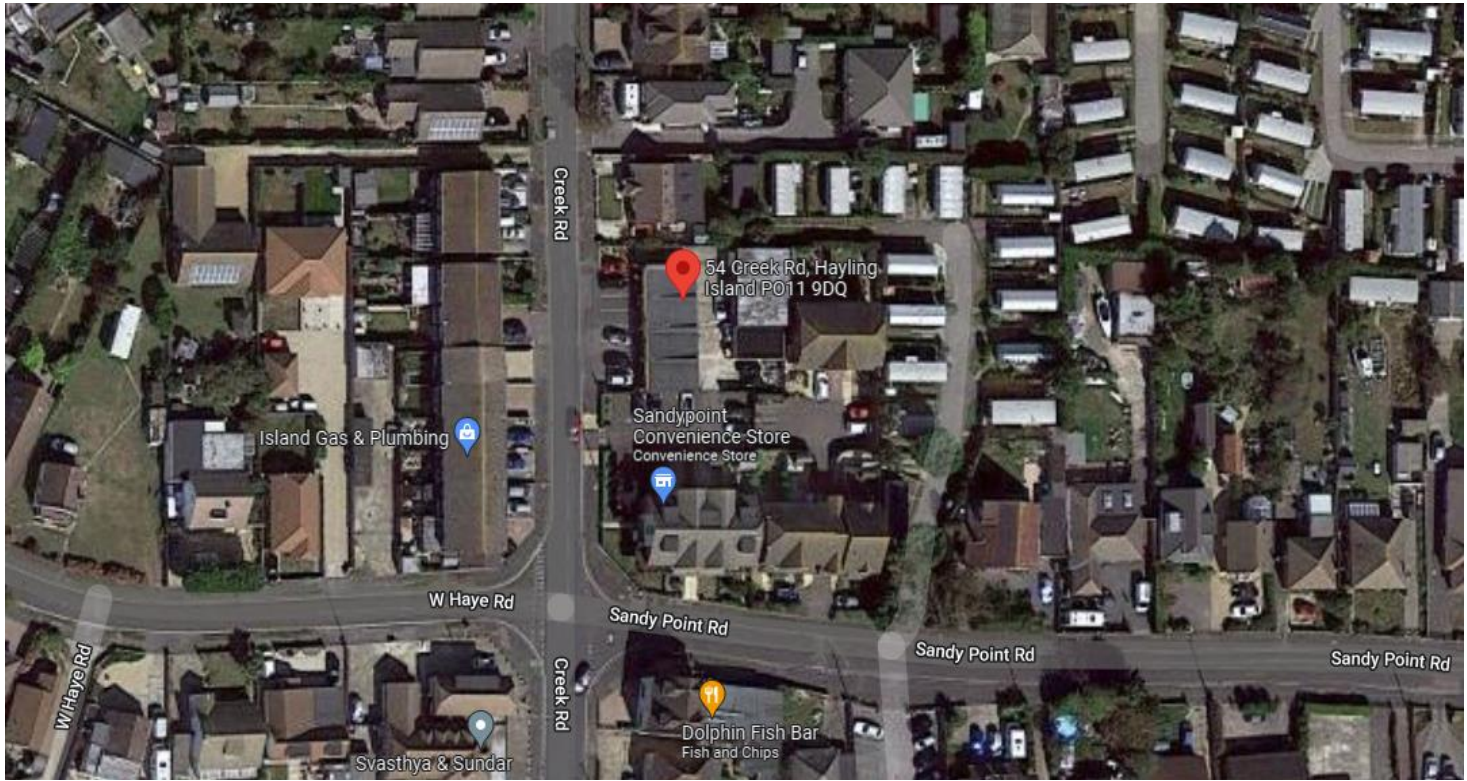
A handwritten signature in black ink that reads "Paul Timmins". The signature is written in a cursive, flowing style.

Paul Timmins

Director, KPT Properties t/a Timmins Engineering Design Services

Appendix A – CCTV Survey

Drainage Overview



Job Information

Client – Sharon Swan

Client Ref – 25439

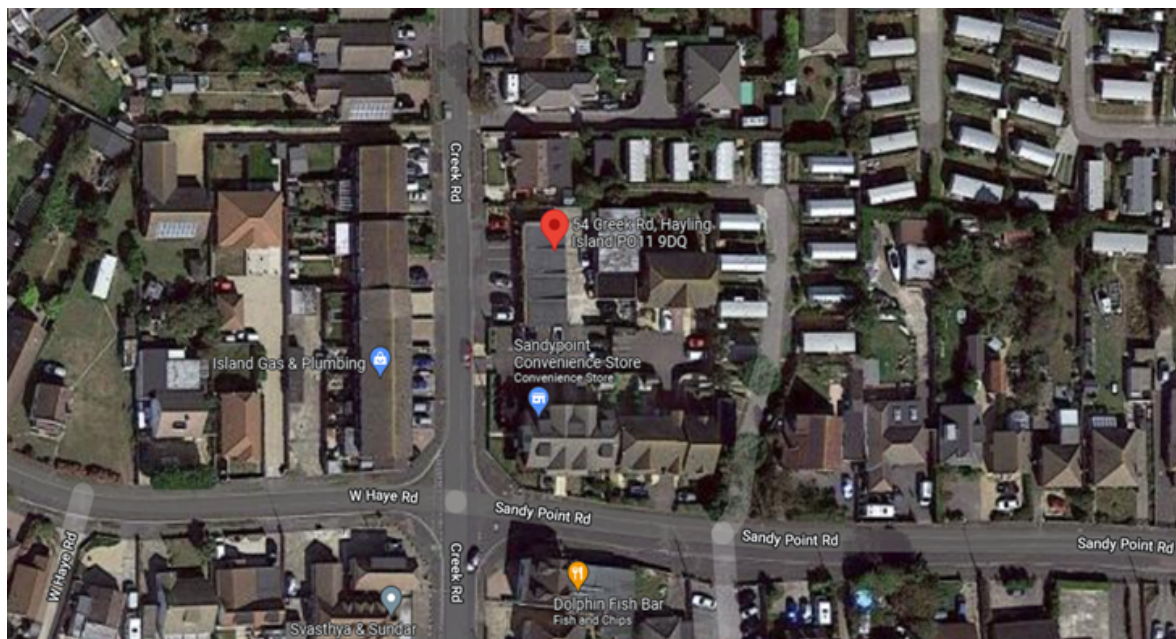
Visit Date – 15th March 2022

Engineer – Alick J

Job Summary

- ✓ Drain Clearance.
- ✓ CCTV Survey Undertaken
- ! Drainage Repairs Required.

Project Report



50-56 Creek rd

PO11 9RE

Project Information

50-56 Creek rd

PO11 9RE

Contractor:

Date:
15/03/22

Contractor Email:

Project Information

Project Name

25439

Street

50-56 Creek rd

Postcode

PO11 9RE

Parking Restrictions

Client Name

Sharon Swan

Contractor Email

Drawing Number

Reason

Contractor

Export Date

15/03/22

Export Time

04:04 PM

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_1

Start Point:
mh1

Direction:
Downstream

End Point:
storm water downpipe

Pipe Material:
Vitrified Clay (VC)

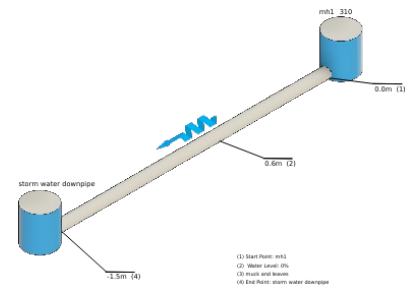
Pipeline Size:
110

Pipe Usage:
Storm

Depth of Start Point:
310

Date:
15/03/22

Time:
03:20 PM



0.1m (3)

Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_1

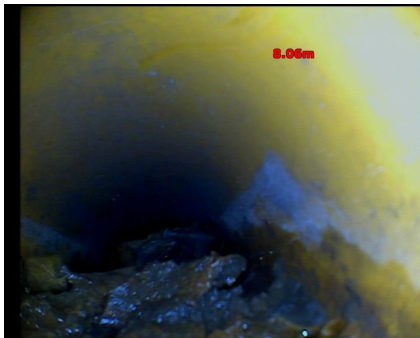
Start:
mh1

Direction:
Downstream

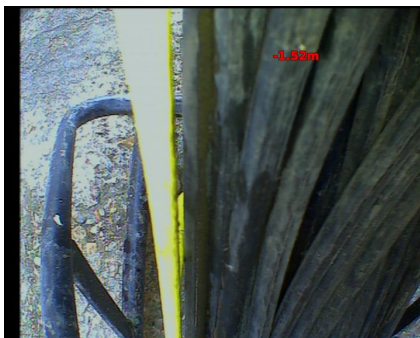
End:
storm water downpipe



Observation [1]:
Start Point: mh1



Observation [3]:
muck and leaves



Observation [4]:
End Point: storm water downpipe

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_2

Start Point:
mh1

Direction:
Downstream

End Point:
sub line mains

Pipe Material:
Vitrified Clay (VC)

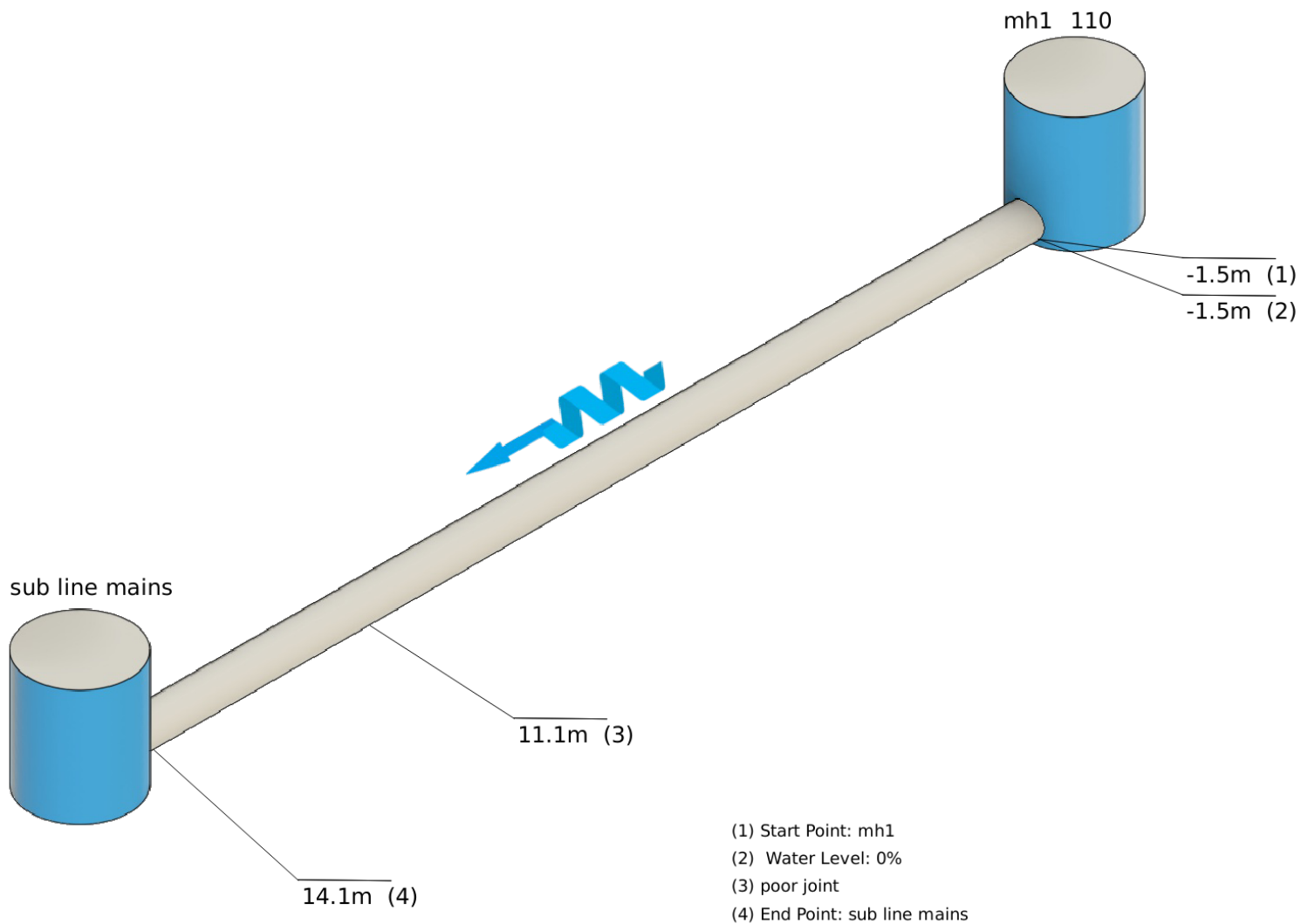
Pipeline Size:
110

Pipe Usage:
Storm

Depth of Start Point:
110

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_2

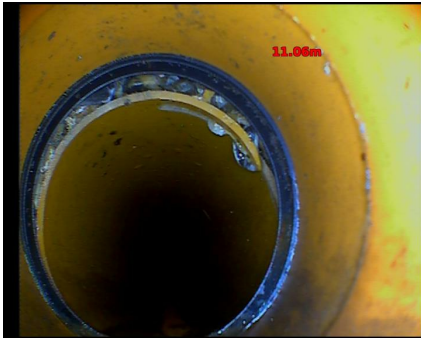
Start:
mh1

Direction:
Downstream

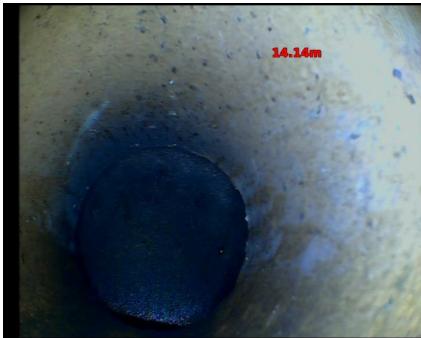
End:
sub line mains



Observation [1]:
Start Point: mh1



Observation [3]:
poor joint



Observation [4]:
End Point: sub line mains

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_3

Start Point:
mh2

Direction:
Downstream

End Point:
redundant

Pipe Material:
Vitrified Clay (VC)

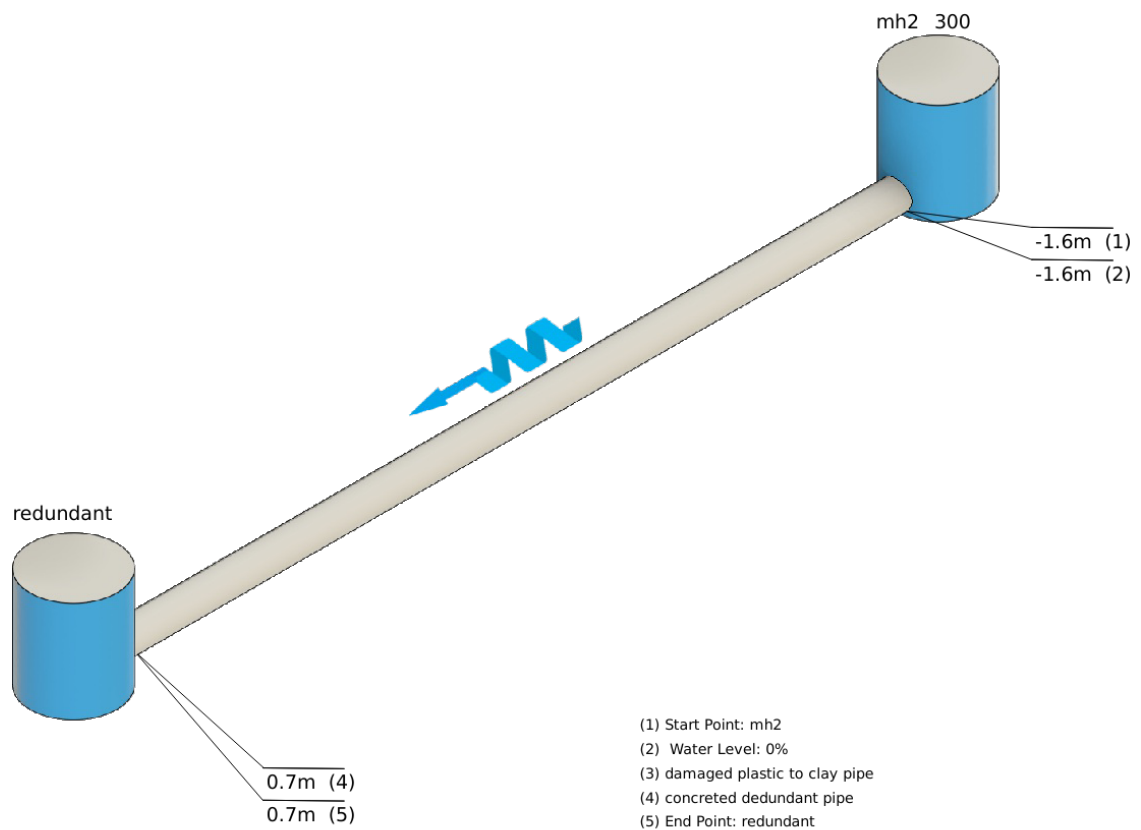
Pipeline Size:
110

Pipe Usage:
Foul

Depth of Start Point:
300

Date:
15/03/22

Time:
03:20 PM



0.2m (3)

Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_3

Start:
mh2

Direction:
Downstream

End:
redundant



Observation [1]:
Start Point: mh2



Observation [3]:
damaged plastic to clay pipe



Observation [4]:
concreted redundant pipe



Observation [5]:
End Point: redundant

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_4

Start Point:
mh2

Direction:
Downstream

End Point:
mh3

Pipe Material:
Vitrified Clay (VC)

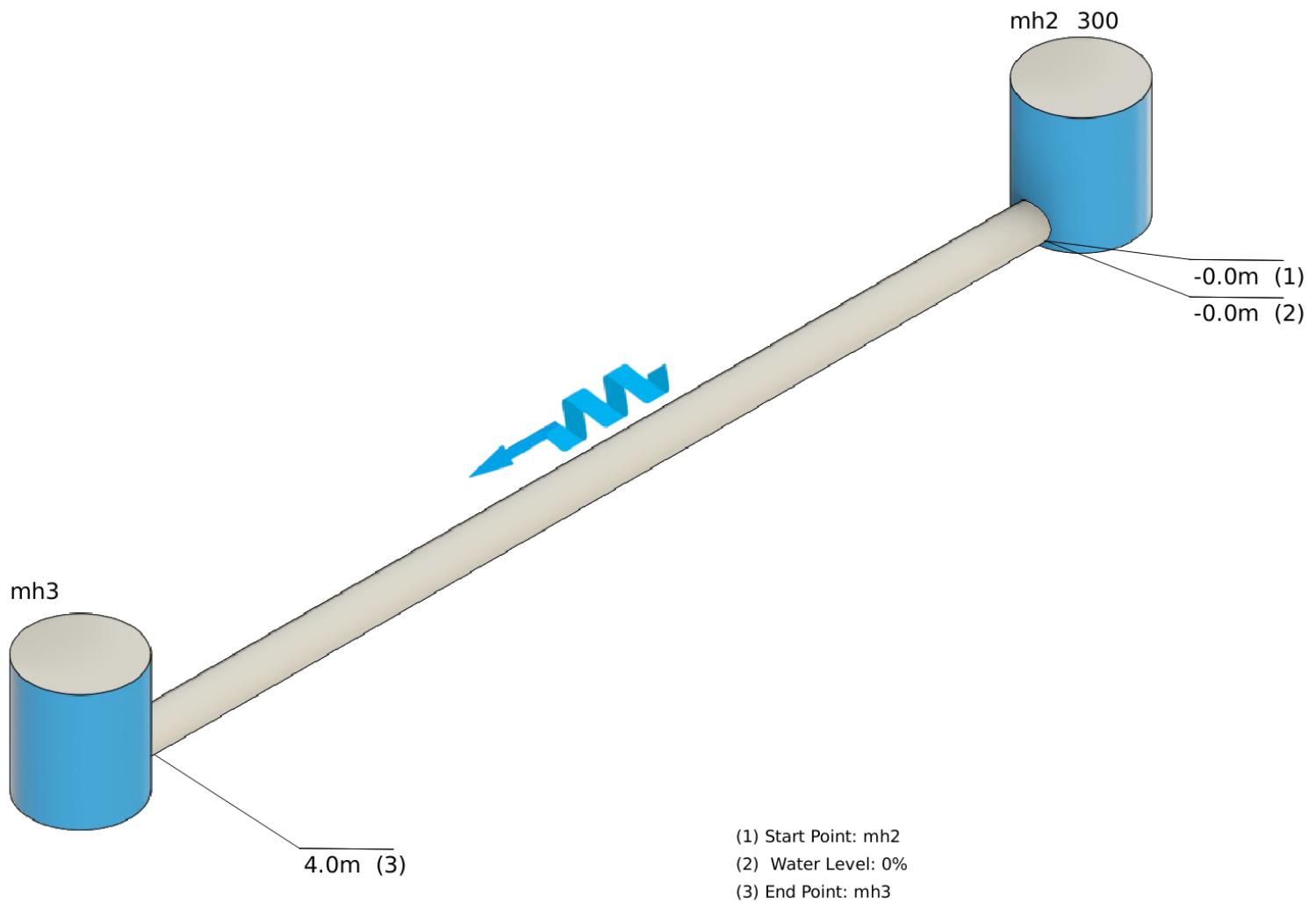
Pipeline Size:
110

Pipe Usage:
Combined

Depth of Start Point:
300

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section 4

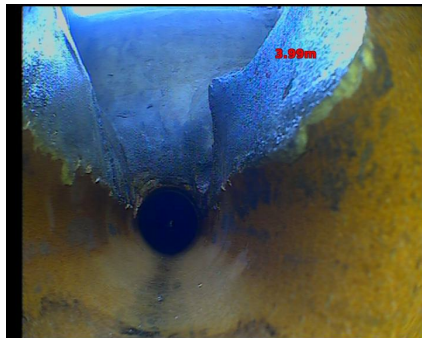
Start:
mh2

Direction:
Downstream

End:
mh3



Observation [1]:
Start Point: mh2



Observation [3]:
End Point: mh3

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_5

Start Point:
mh3

Direction:
Downstream

End Point:
gully

Pipe Material:
Vitrified Clay (VC)

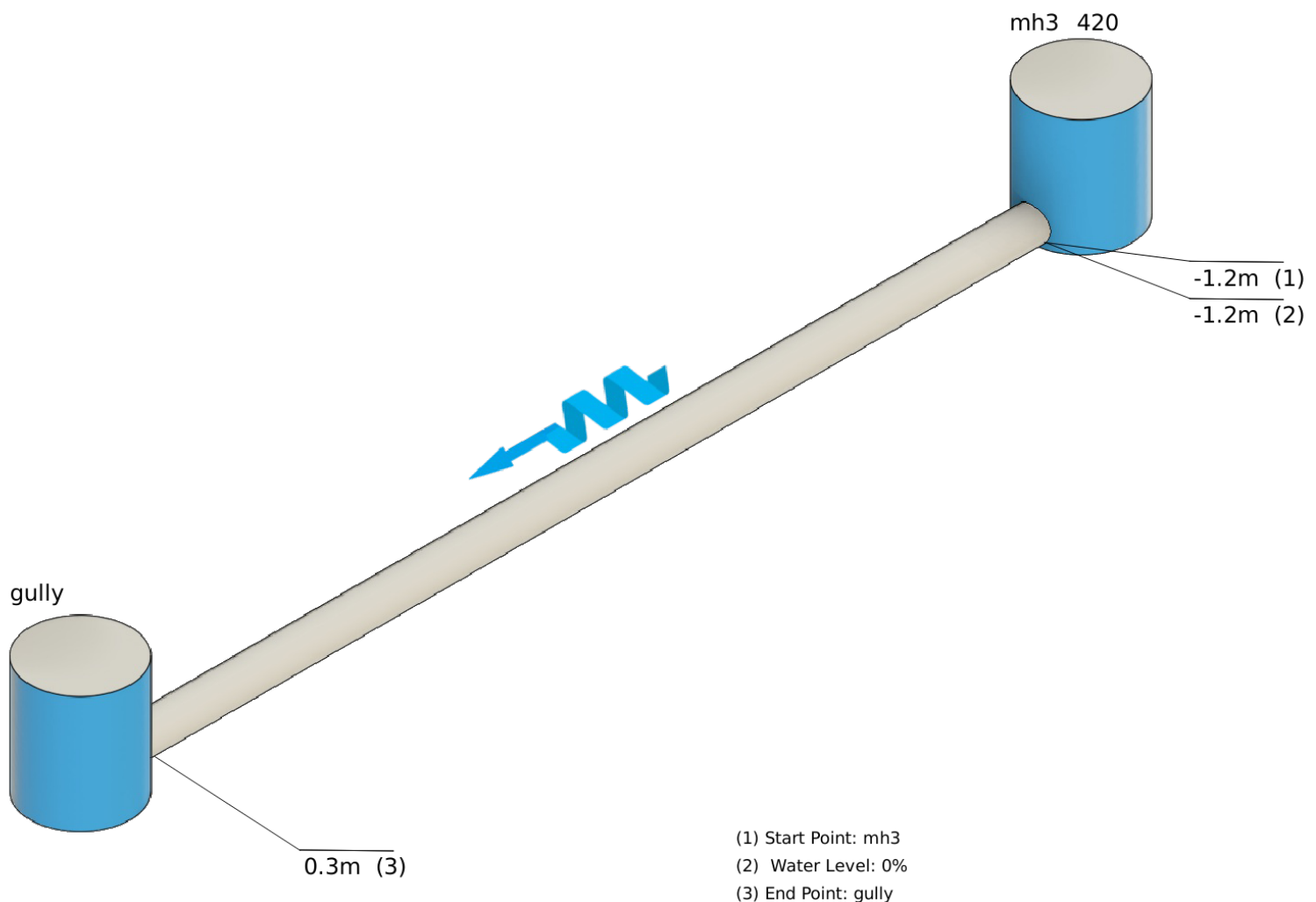
Pipeline Size:
110

Pipe Usage:
Foul

Depth of Start Point:
420

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_5

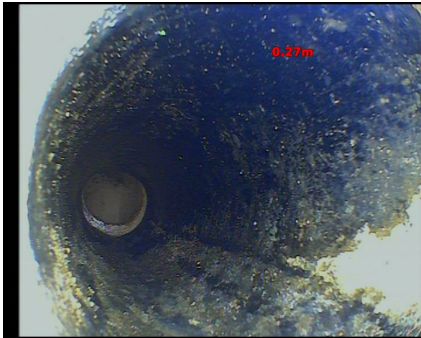
Start:
mh3

Direction:
Downstream

End:
gully



Observation [1]:
Start Point: mh3



Observation [3]:
End Point: gully

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_6

Start Point:
mh3

Direction:
Downstream

End Point:
mh4

Pipe Material:
Vitrified Clay (VC)

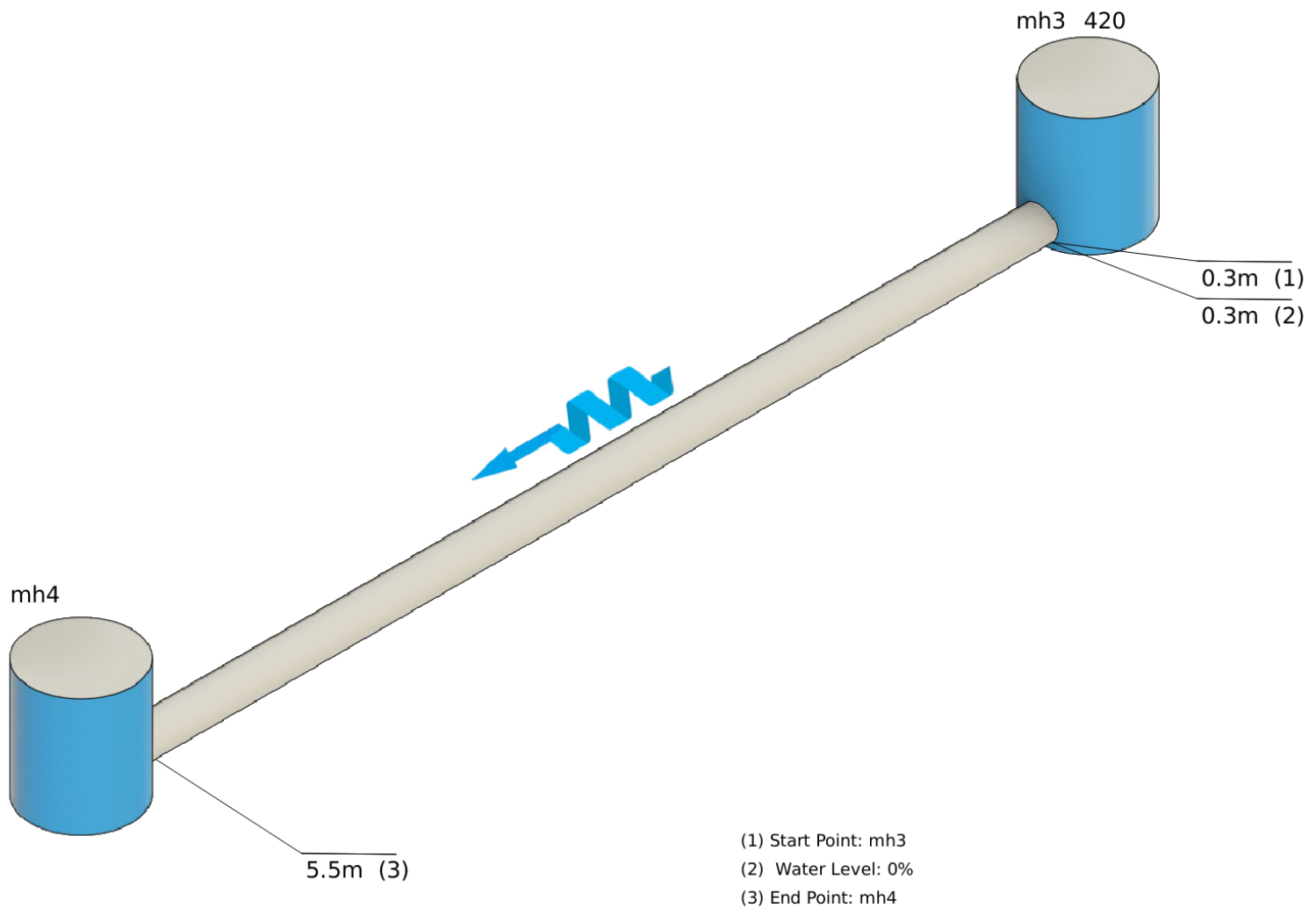
Pipeline Size:
110

Pipe Usage:
Combined

Depth of Start Point:
420

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_6

Start:
mh3

Direction:
Downstream

End:
mh4



Observation [1]:
Start Point: mh3



Observation [3]:
End Point: mh4

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_7

Start Point:
mh4

Direction:
Downstream

End Point:
redundant

Pipe Material:
Vitrified Clay (VC)

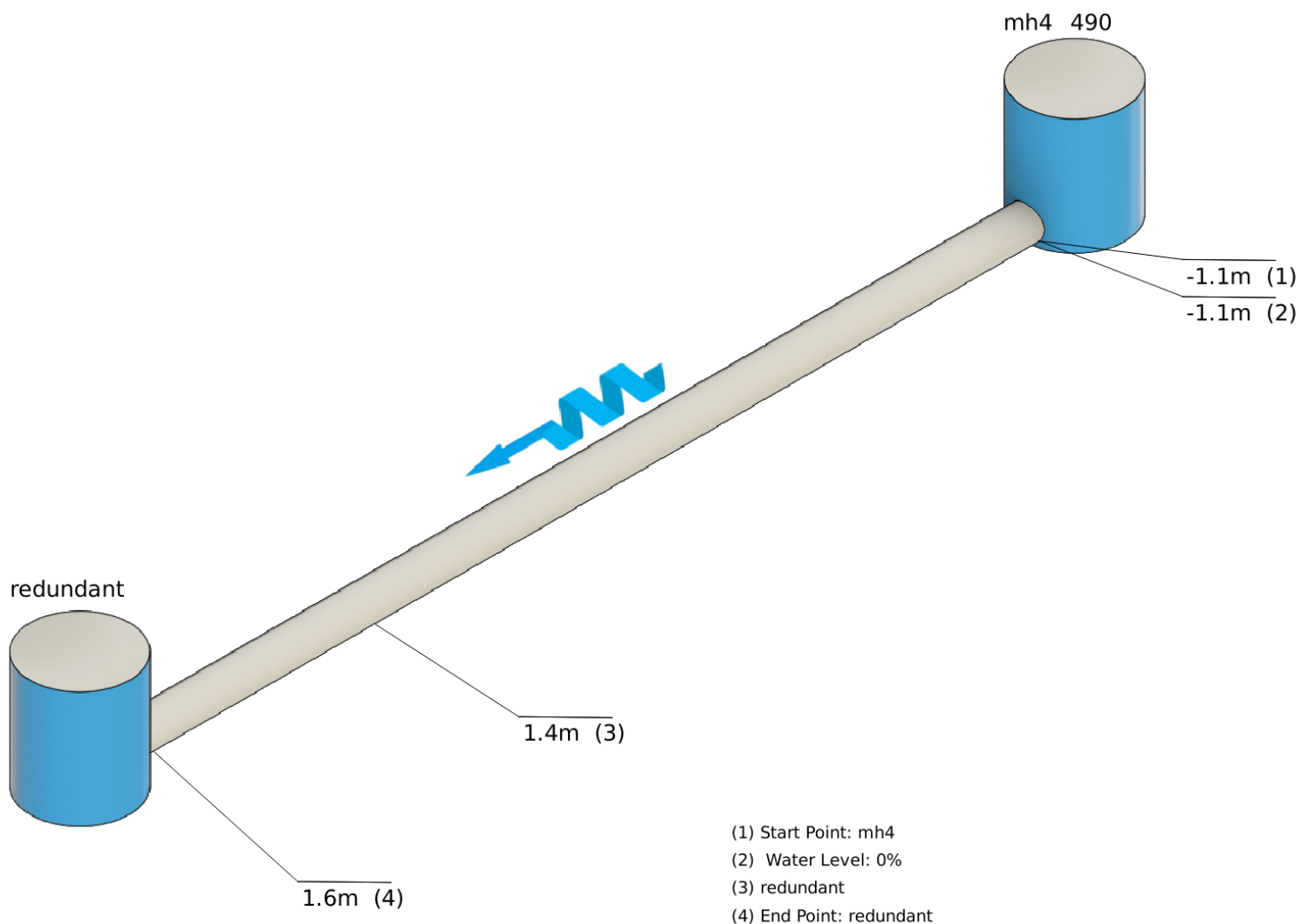
Pipeline Size:
110

Pipe Usage:
Foul

Depth of Start Point:
490

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_7

Start:
mh4

Direction:
Downstream

End:
redundant



Observation [1]:
Start Point: mh4



Observation [3]:
redundant



Observation [4]:
End Point: redundant

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_8

Start Point:
mh4

Direction:
Downstream

End Point:
gully

Pipe Material:
Vitrified Clay (VC)

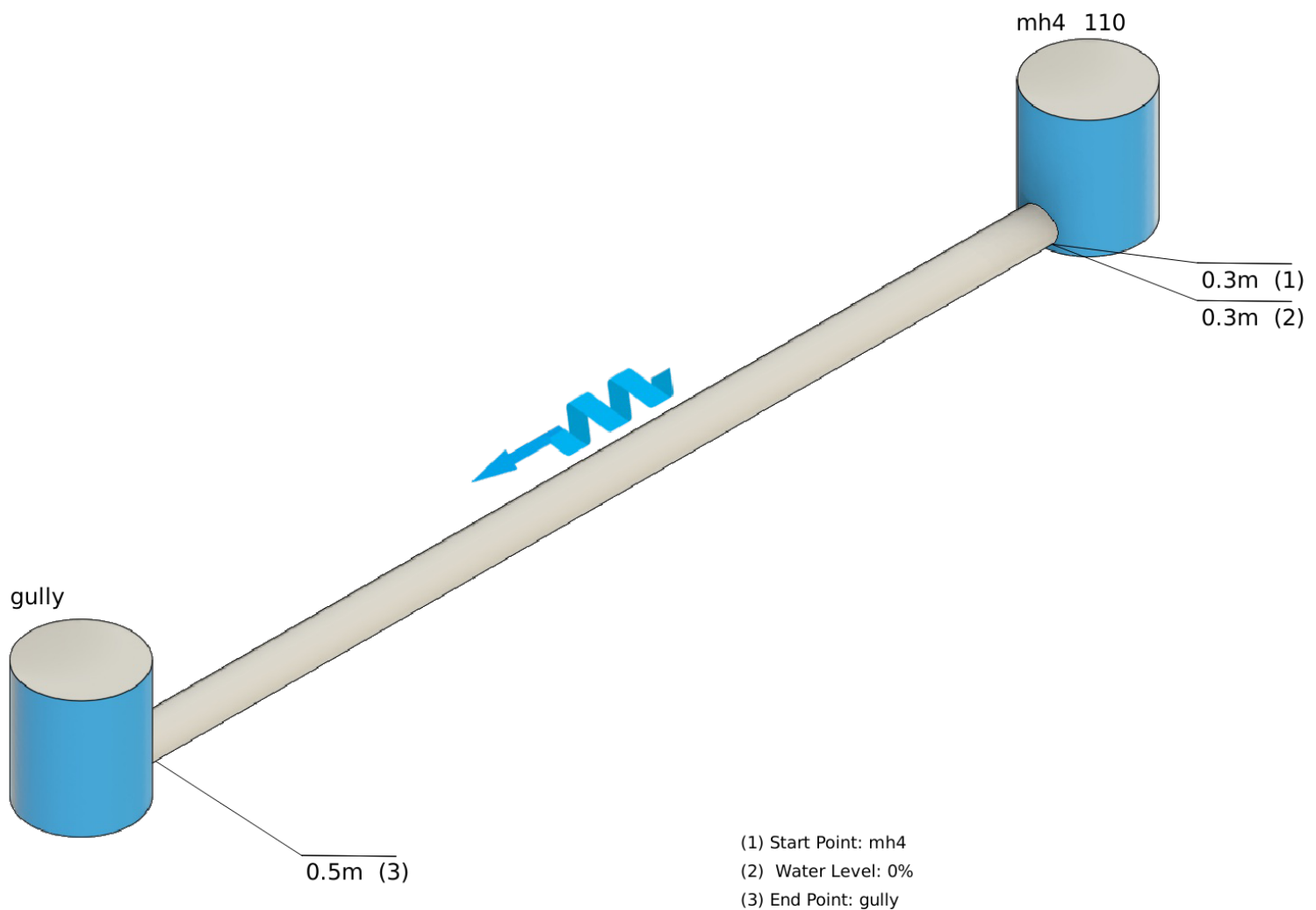
Pipeline Size:
110

Pipe Usage:
Combined

Depth of Start Point:
110

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

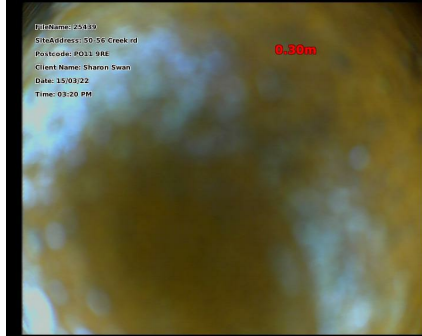
Contractor Email:

Section Video:
section_8

Start:
mh4

Direction:
Downstream

End:
gully



Observation [1]:
Start Point: mh4



Observation [3]:
End Point: gully

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_9

Start Point:
mh4

Direction:
Downstream

End Point:
toilet

Pipe Material:
Vitrified Clay (VC)

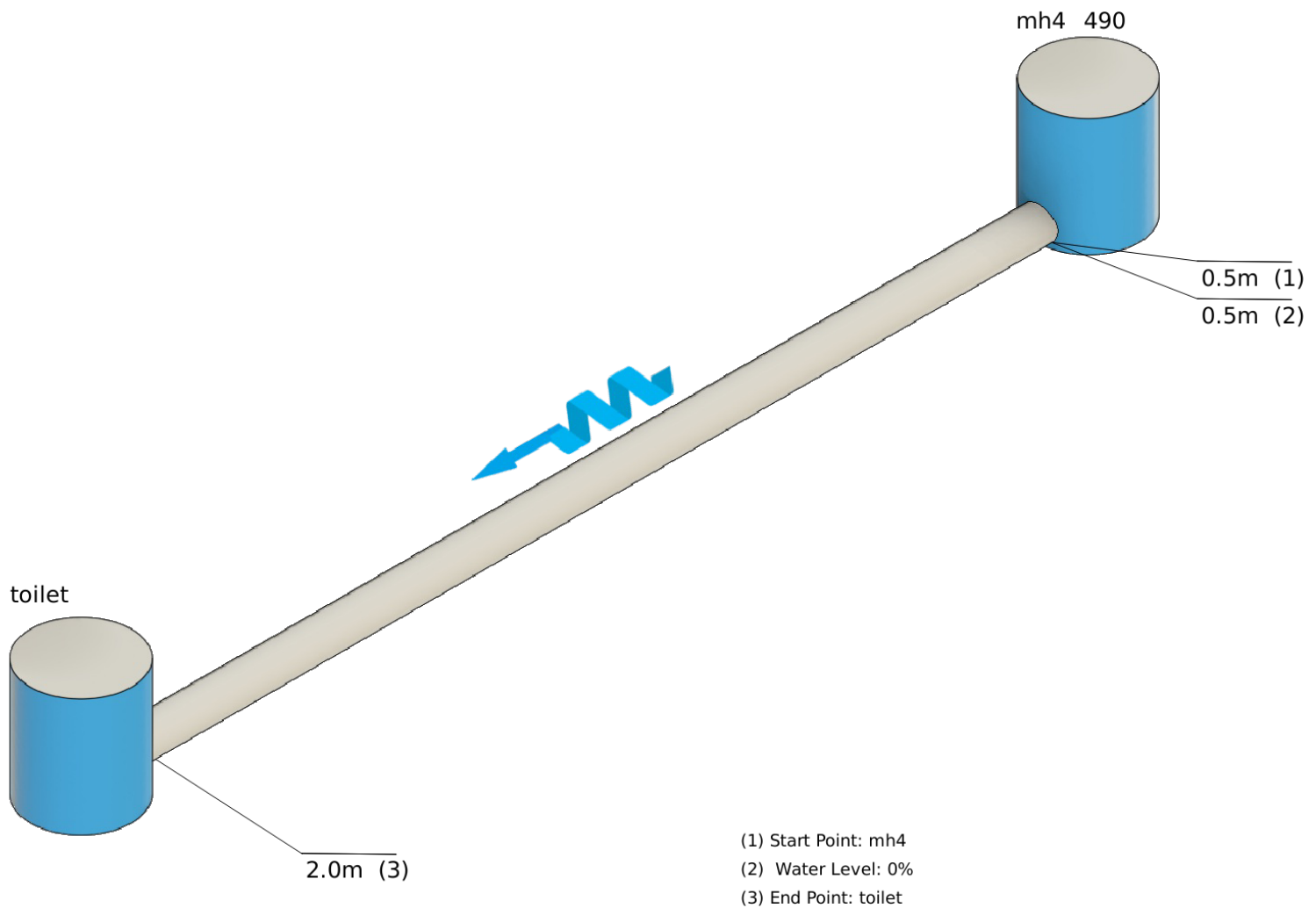
Pipeline Size:
110

Pipe Usage:
Foul

Depth of Start Point:
490

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

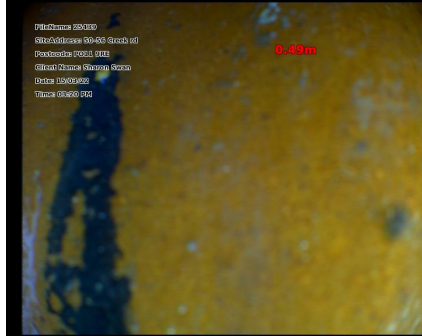
Contractor Email:

Section Video:
section_9

Start:
mh4

Direction:
Downstream

End:
toilet



Observation [1]:
Start Point: mh4



Observation [3]:
End Point: toilet

Section Information

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

Contractor Email:

Section Video:
section_10

Start Point:
mh4

Direction:
Downstream

End Point:
mh5

Pipe Material:
Vitrified Clay (VC)

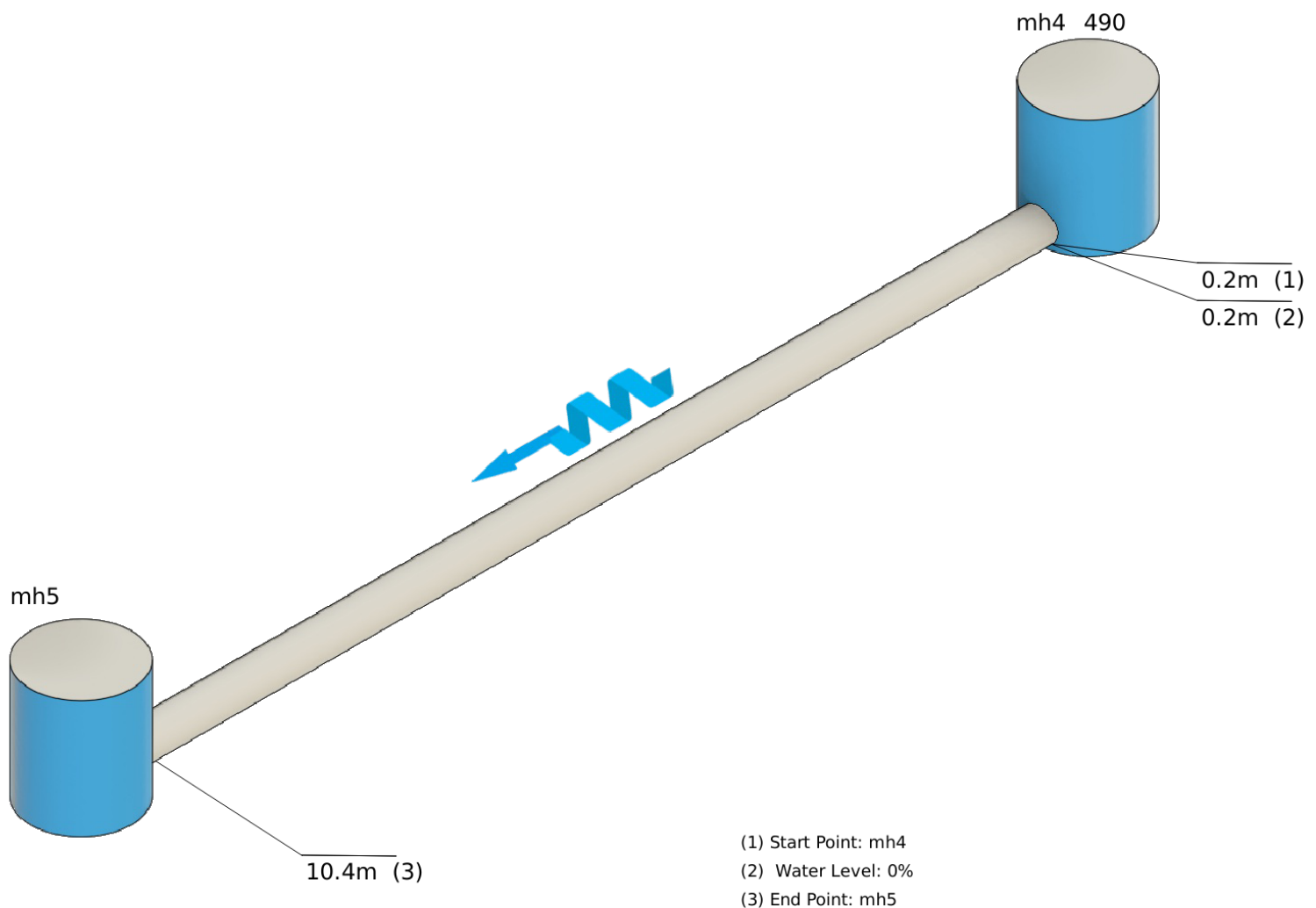
Pipeline Size:
110

Pipe Usage:
Combined

Depth of Start Point:
490

Date:
15/03/22

Time:
03:20 PM



Section Observations

50-56 Creek rd

PO11 9RE

Engineer:
Alick

Date:
15/03/22

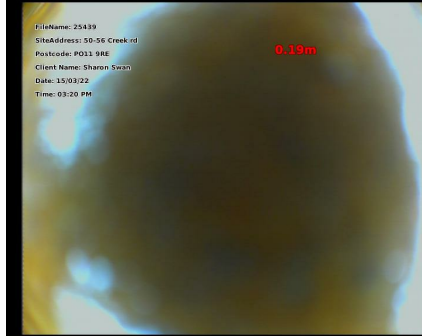
Contractor Email:

Section Video:
section_10

Start:
mh4

Direction:
Downstream

End:
mh5





Job Information -

Drain Division were requested by Sharon Swan to attend at 50 – 56 Creek Road, Hayling Island, PO11 9RE to carry out a CCTV survey of the drains.

Findings -

The engineer arrived on site and found the conditions were good so he proceeded to carry out the CCTV survey to assess the condition of the drains.

Please see the CCTV survey report and site plan for full detail and reference.

- The drains are 4" plastic.
- Depth 300mm - 420mm.
- MH2 to gully – Broken clay to plastic.
- MH2 – Lateral 1 redundant.
- MH2 – Lateral 2 redundant.
- MH4 – Lateral 1 redundant.

Overview –

The CCTV revealed that the drains have suffered due to a broken joint in the pipework.. The drain is in adequate condition to carry out repairs though some excavation will be needed.

It is recommended that the following repairs are carried out to restore full function to the system.

- Excavation to access pipework.
- Gully to be refitted.
- To install 1m of OSMA pipe.
- Gound to be reinstated – Concrete.

The cost for these works is £995.00 + VAT.



Please Note:

Every effort has been made to allow for contingencies, however due to the nature of the work involved below ground, on occasion additional works become necessary due to unforeseen circumstances. If this occurs after works have commenced, we will bring the matter to your attention at the earliest opportunity and retain photographic evidence and advice of any additional scale of cost. This quotation is only valid for up to 6 months. We cannot always guarantee our quotes for remedial works if left longer than this because the drains may deteriorate further resulting in needing further works than initially advised.

All remedial works carry a 10-year guarantee.

Once repairs have been undertaken the client should ensure the drainage system is periodically inspected in the future for any deterioration and kept free flowing/free of blockages. Any damage noted during future inspections should be repaired immediately in accordance with current Building Regulations.

With any repair process, complications and unforeseen circumstances can arise. These scenarios will be reported whilst on site and could potentially cause an increase in repair costs and inconvenience.

Where any excavation reinstatement of the surface is required, the reinstatement will always attempt to match the previous surface patterns and colouring, however we cannot guarantee an exact If we can be of further assistance, please do not hesitate to contact us.

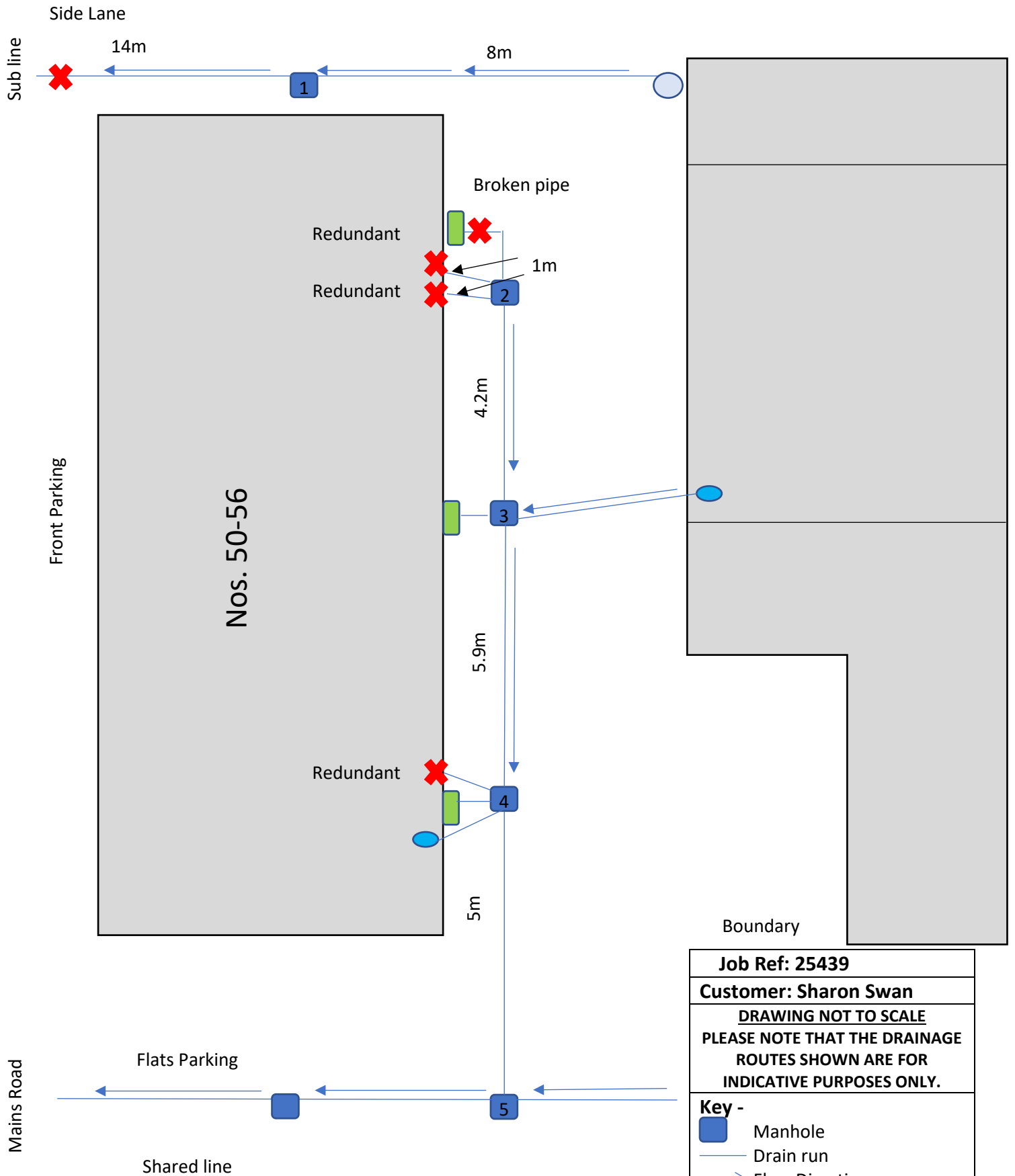
If we can be of further assistance please do not hesitate to contact us.

Many thanks for your custom.

Kind Regards

Drain Division





Job Ref: 25439

Customer: Sharon Swan

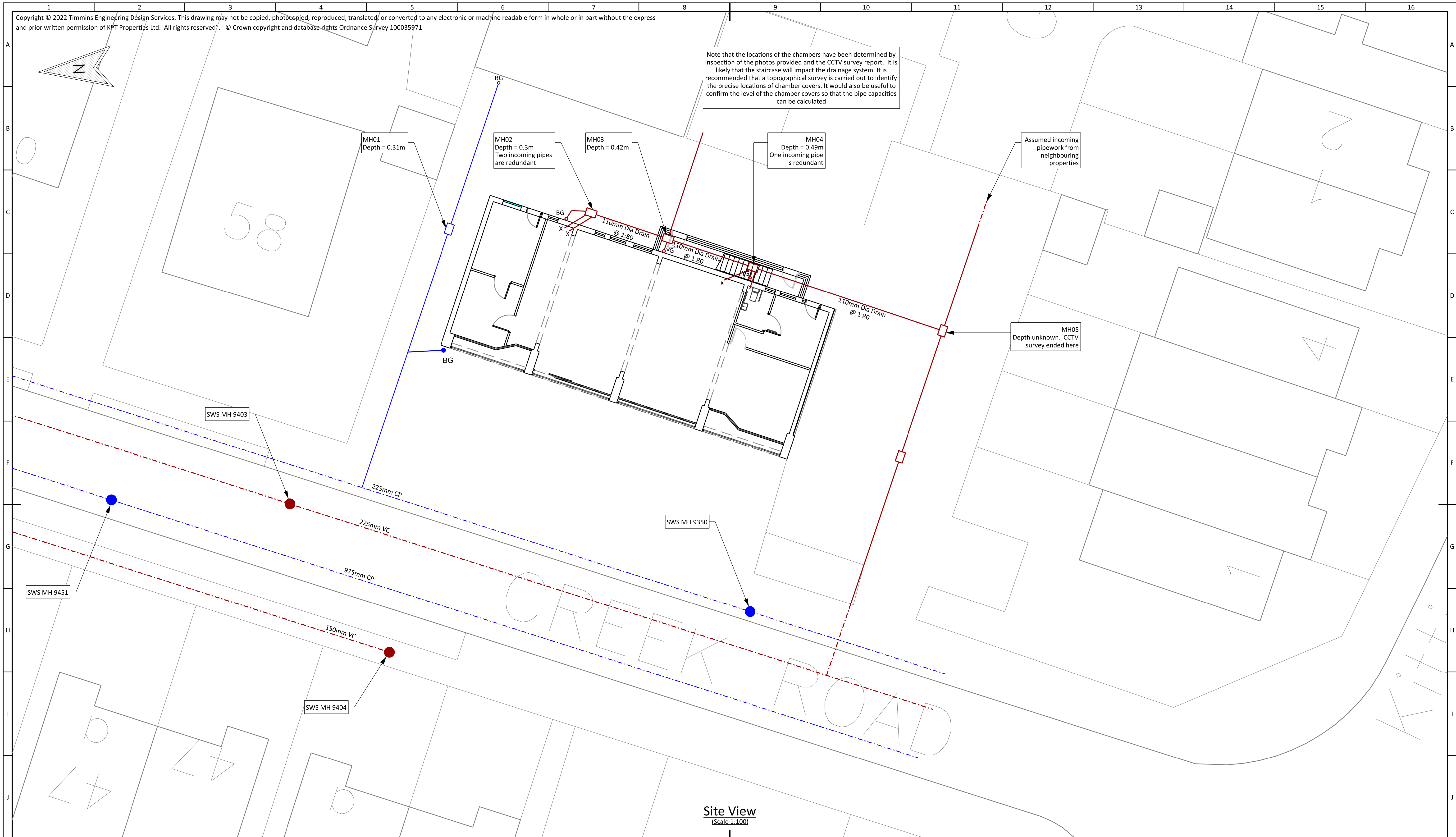
DRAWING NOT TO SCALE
PLEASE NOTE THAT THE DRAINAGE ROUTES SHOWN ARE FOR INDICATIVE PURPOSES ONLY.

Key -

- Manhole
- Drain run
- Flow Direction
- W/C
- Gully

DRAIN
DIVISION
Service when you need it !

Appendix B – Drainage Layout Plan



NOTES:

1. This drawing is to be read in conjunction with all other relevant drawings.
 2. All chamber and pipeline construction to be in accordance with the relevant provisions of the Building Regulations Part H, BS EN 752 and the manufacturers' recommendations.
 3. Concrete grades to be to BS8500: Grade ST4 unless specified otherwise.
 4. Pipework to comprise: 100/150mm Dia. OsmoDrain to BS 13476 (for foul flows), and 100mm/150mm/225mm Osmo Twin Wall pipe for surface water flows or similar approved.
 5. Class Z Concrete bed and surround to be provided as follows: 100mm Dia. with less than 0.30m cover and 150mm Dia. with less than 0.60m cover 'Flexcell' or similar required at each pipe joint NB: concrete bed and surround also required for 150mm dia. and above vehicle access areas. Class S Granular bed with less than 1.20m cover from finished levels. Class S Granular bed and surround to be provided where pipes are located beneath surfaced areas with cover depths greater than above.
- N.B. The above information relates to pipeline protection at depths from finished level and additional protective measures may be necessary to protect pipes from construction operations. Type 1 Granular basinfill required to beddings. & 3.
6. For full notes on clay pipes: Refer to CPDA pamphlet 'Technical Notes For Vitrified Clay Pipes'.

7. Alternative pipes and fitting in plastics in PVC-U structured wall or plain wall may be used in accordance with WIS 04-35-01 and BS EN 1401-1 with flexible joints and manufacturers recommendations.
8. All existing levels of drains, manholes & connection points to be checked before work commences. Any deviations from the levels stated should be advised to the Drainage Designer prior to the works commencing.
9. All existing statutory authorities and private services, water mains etc to be carefully located and exposed before work commences.
10. Precise setting out of new drains to be checked on site after notes 8 & 9 are complete.
11. Long rigid bends are to be used at the base of all foul stacks. All bottle gullies are to be floodable.
12. Manhole cover load classes to BS EN 124.
13. Foul drain pipes are generally laid at 1:40, unless otherwise stated.
14. Surface water drain pipes are generally laid at 1:100 unless otherwise stated.

KEY:

- | | | | |
|--|--|---|--------------------------------|
|  | Existing Surface Water Drainage |  | Foul Water Sewer |
|  | Surface Water Drainage (Not adoptable) |  | Surface Water Sewer |
|  | Proposed Surface Water Drain |  | Existing Foul Drain |
| RE  | Rodding Eye |  | Proposed Foul Drain |
| YG  | Yard Gully |  | Silt Trap |
| BG  | Bottle Gully to Rattle Water Pipe | | |
|  | Concrete Ring Soakaway |  | ACO Drain |
|  | Existing Private Inspection Chamber |  | Cellular Crate Soakaway |
|  | |  | New Private Inspection Chamber |

CONSTRUCTION RISKS	MAINTENANCE/CLEANING RISKS	DEMOLITION/ADAPTATION RISKS
In addition to the hazard/risks normally associated with the type of works detailed on this drawing, take note of the above. It is assumed that all works on this drawing will be carried out by a competent contractor working where appropriate, to an appropriate method statement.		
SAFETY HEALTH AND ENVIRONMENTAL INFORMATION BOX		

[illegible]

PROJECT	CREEK ROAD HAYLING ISLAND
DESCRIPTION	DRAINAGE DESIGN
CLIENT ADDRESS	Sharon Swan Creek Road Hayling Island PO11 9RL
DRAWING CLASSIFICATION	PRELIMINARY ISSUE

TITLE CREEK ROAD HAYLING ISLAND DRAINAGE DESIGN	
TIMMINSENGINEERING DESIGN SERVICES 	Telephone: 07900 404760 http://www.timminsconsulting.co.uk Registered in England and Wales No. 06950986
DRAWING NUMBER	CHY0101 REV. P01