

Foul Water Drainage Strategy

The Slips

Scocles Road

Minster on Sea

Sheerness

ME12 3SN

RMB Consultants (Civil Engineering) Ltd

August 2016

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1. Background and Introduction

This Foul Water Drainage Strategy accompanies a planning application submitted to Swale Borough Council. The planning application is for residential development on land at The Slips, Scocles Road, Minster on Sea, Sheerness, ME12 3SN.

2. Development Location and Description

Development Location

The site is located at Scocles Road, Minster on Sea, Figure 1. The site is situated to the east of Scocles Road and to the north of Elm Lane. It is a greenfield site that covers 2.8ha.



Figure 1. Site location plan.

The proposed development is for the construction of 62 residential dwellings, Figure 2, with 13 of these being offered as self-build plots.



Figure 2. Proposed development.

3. Policy Background

The management of foul water across the development has to comply with local policy documents adopted by Swale Borough Council.

Bearing Fruits 2031 The Swale Borough Council Local Plan

The emerging Local Plan was placed on consultation in December 2014.

Policy DM 21 - Water, flooding and drainage states that:

When considering the flooding and drainage implications of development, development proposals will:

1. *Accord with national planning policy and technical guidance;*
2. *Avoid inappropriate development in areas at risk of flooding and where development would increase flood risk elsewhere;*
3. *Provide site specific flood risk assessments, as required, carried out to the satisfaction of the Environment Agency and, if relevant, the Internal Drainage Board. These will, where necessary, include details of new flood alleviation and flood defence measures to be installed and maintained by the developer;*
4. *Include, where possible, sustainable drainage systems to restrict runoff to an appropriate discharge rate, maintain or improve the quality of the receiving watercourse, to enhance biodiversity and amenity and increase the potential for grey water recycling;*
5. *Integrate drainage measures within the planning and design of the project to ensure that the most sustainable option can be delivered, especially where, exceptionally, development is to be permitted in an area of flood risk;*
6. *Within areas at risk of flooding, submit a suitable flood warning and emergency plan that has been approved by the relevant emergency planning regime and, where appropriate, the emergency services;*
7. *Where necessary, demonstrate that adequate water supply and wastewater connection and treatment infrastructure is in place before construction commences and that these details have been approved by the appropriate water company and funded by the development where appropriate;*
8. *Ensure future unconstrained access to the existing and future sewerage and water supply infrastructure for maintenance and up-sizing purposes; and*
9. *Make efficient use of water resources and protect water quality, including, for new residential development, all homes to be designed to achieve a minimum water efficiency of 105 litres per person per day (equivalent to Code for Sustainable Homes Levels 3) in advance of any alternative national, mandatory, requirements which may be applied.*

4. Site Characteristics

Topographical Survey - A detailed topographical survey has been carried out. The northern boundary of the site is relatively flat at around 17m AOD (Above Ordnance Datum), The site slopes south to a level of 13m AOD at the south western corner of the site, Figure 3, at a gradient of approximately 1 in 40.

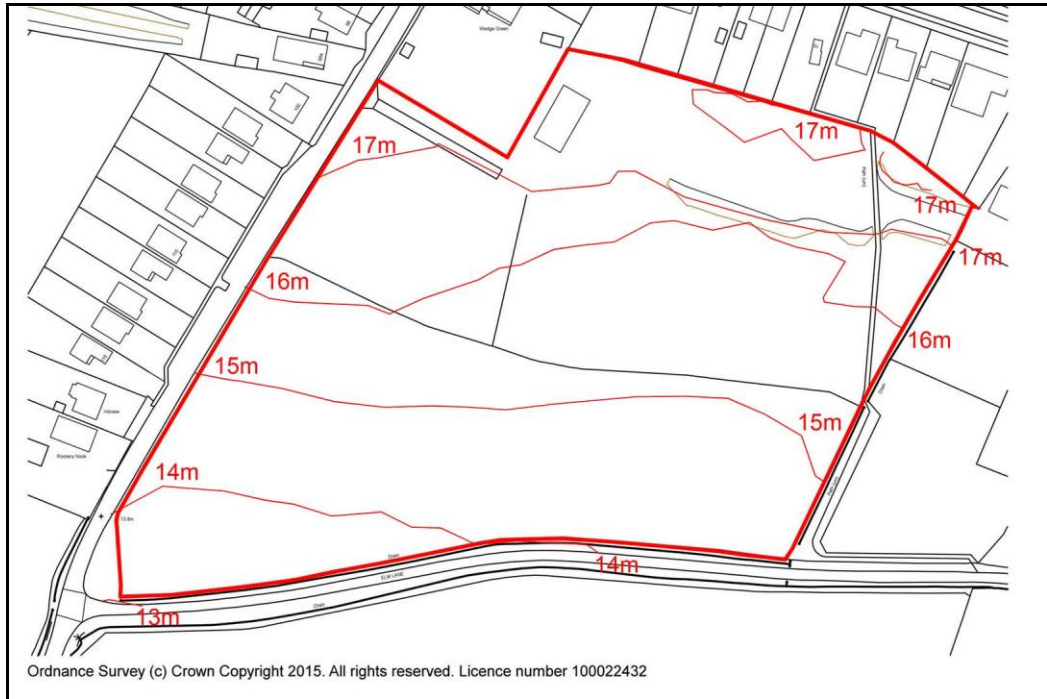


Figure 3. Local topography.

5. Foul Water Management Strategy

Existing Infrastructure

Southern Water is responsible for the adopted drainage infrastructure in Minster on Sea. The public sewer record has been obtained from Southern Water, Figure 4.

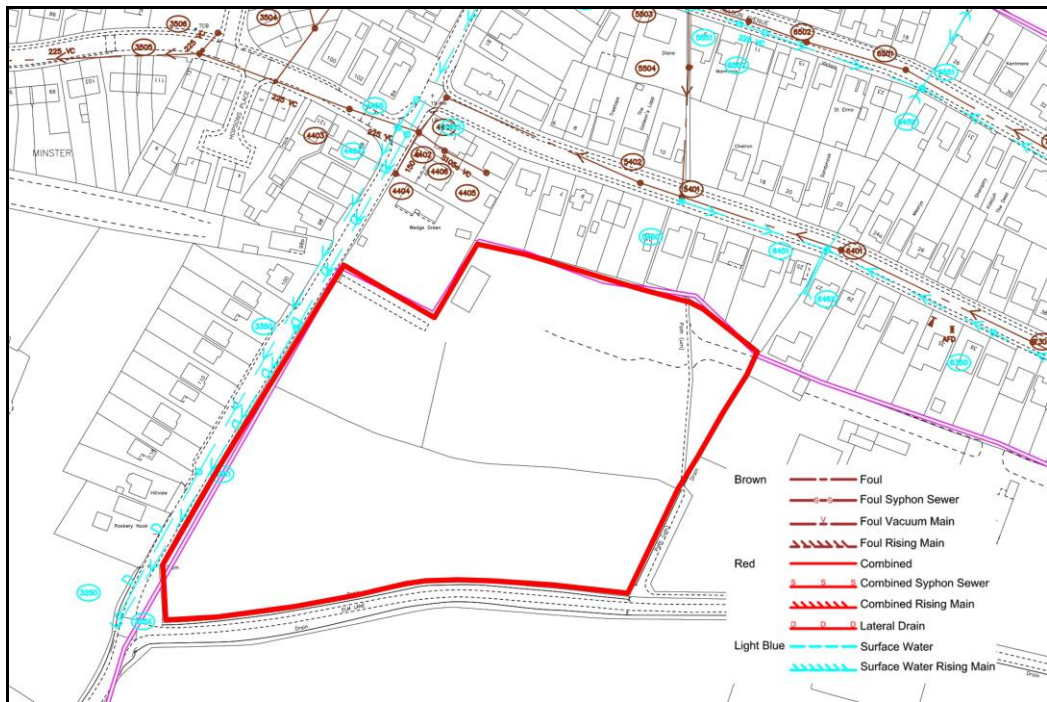


Figure 4. Public sewer record with site edged red. (© Southern Water)

Two surface water sewers are shown running north to south along Scocles Road. One, marked “D” is decommissioned. The other surface water sewer is 375mm diameter and outfalls to a ditch at the south west corner of the site.

The nearest foul water sewer is to the north of the site. This is a 150mm diameter pipe. The head of the run is at manhole 4404 with a cover level of 18.41mAOD and an invert level of 17.32mAOD. The depth of the foul sewer is 1.09m.

A Level 2 Design Capacity Check was submitted to Southern Water in October 2015. The capacity check was for 72 dwellings. Sewers for Adoption 7th Edition states that design flow rates for dwellings should be 4000 litres per dwelling per day. The capacity check was for a flow of 3.3 l/s. The proposed development is now for 62 dwellings, a flow of 2.9 l/s.

Southern Water’s response dated 23rd November 2015, Appendix A, states that:

There is currently inadequate capacity within the existing foul sewerage network to accommodate the foul flow from the proposed development site. The proposed development increases local flow to the proposed

connection point TQ95724404. This causes additional flooding detriment as well as increased spills at a downstream CSO (combined sewer overflow). Remedial work will be required to provide sufficient capacity to service the proposed development.

Southern Water has identified the nearest point to the site where capacity is currently available as Queensborough WTW (Wastewater Treatment Works), approximately 5.7km to the south west.

It also identifies off-site improvements to existing sewers to provide sufficient capacity, Figure 5 and Table 1.

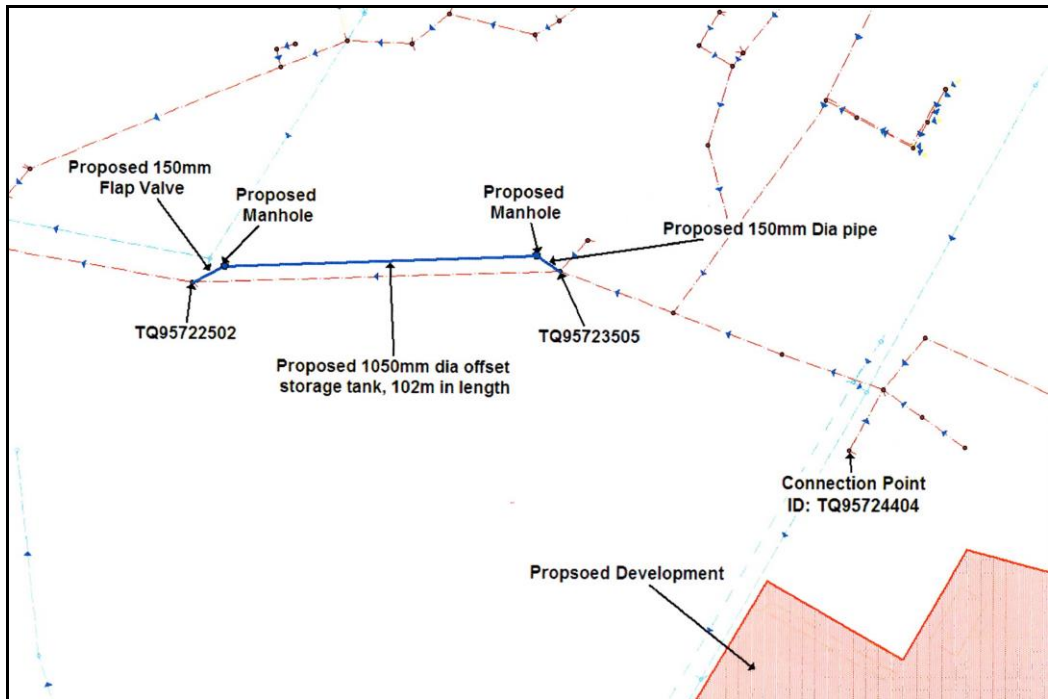


Figure 5. Foul drainage network upgrades identified by Southern Water, marked in blue.

U/S Manhole	D/S Manhole	Sewer Diameter (mm)		Avg. Depth (m)	Length (m)
		Existing	Proposed		
TQ95723505	new manhole	-	150	4.01	4
new manhole	new manhole	-	1050 (storage tank)	4.58	102
new manhole	TQ95722502	-	150 (flap valve)	3.18	-
TQ95722502	TQ9473370X	-	*30m ³ storage tank		

*Storage tank near Wards Hill Road CSO to provide an additional 30m³ volume.

Table 1. Proposed public sewer improvements schedule.

Strategy Approach

This strategy provides a solution for the on-site foul drainage in line with Sewers for Adoption 7th Edition.

The topography does not allow foul water to be drained by gravity to the connection point identified by Southern Water at manhole 4404. There are foul sewers further south which serve the development at Thistle Hill Way, Figure 6. There are two potential options for connecting the site to the public sewerage network:

1. Connection by gravity to the sewers south of the site
2. Connection via a pumping station and rising main to the sewer identified by Southern Water north of the site.

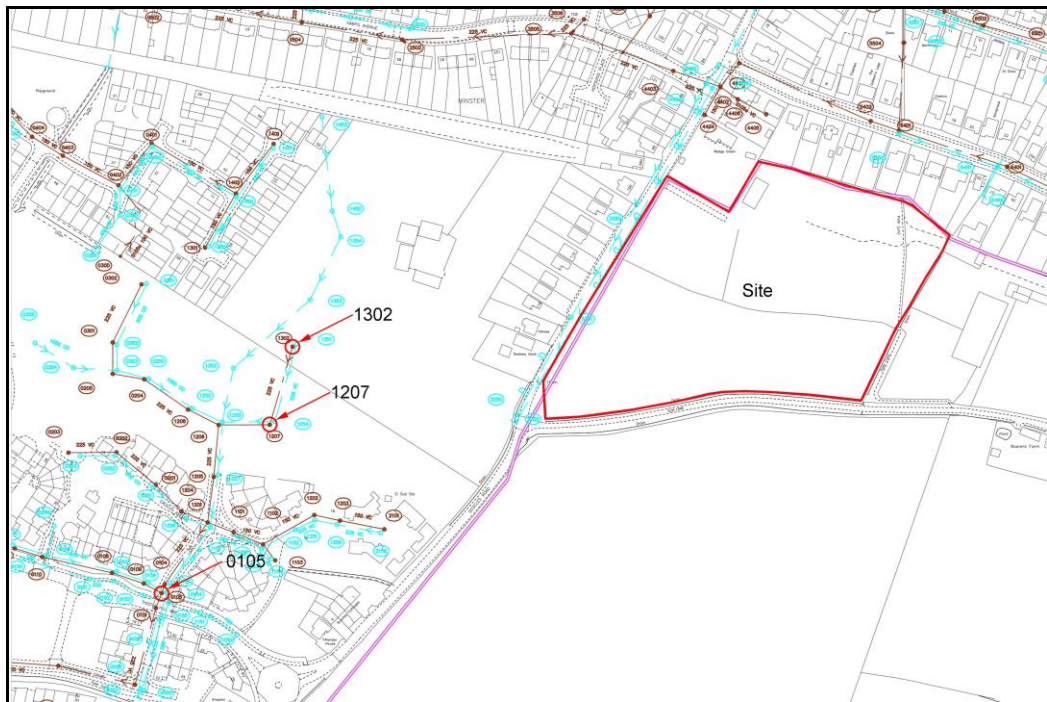


Figure 6. Potential connection points to the south of the site.

The choice between these two options will depend on feasibility, land ownership and cost. The developer proposes to requisition foul sewers under Section 98 of the Water Industry Act 1991. As part of this process Southern Water will identify the most efficient mechanism for providing foul sewerage infrastructure which could be either of the above options.

The feasibility of Option 1 depends on the invert level at the point of connection relative to the invert level of the pipe leaving the site. The cover and invert levels of potential connection points are shown in Table 2. The level of the sewer leaving the site has been calculated and an illustrative drainage layout produced, Figure 7. The calculations are included in Appendix B.

Manhole	Cover Level (mAOD)	Invert Level (mAOD)	Pipe Diameter (mm)	Distance from development (m)	Approximate gradient*
1302	13.3	11.5	225	210	1 in 368
1207	12.69	9.669	225	280	1 in 117
0105	10.66	8.319	225	410	1 in 109
*Based on a cover level of 14.7mAOD and an invert level of 12.071mAOD for the pipe leaving the site.					

Table 2. Feasibility of potential connection points south of the site.

Connections to manholes 1207 and 0105 are feasible as Sewers for Adoption 7th Edition considers that self-cleansing velocity criterion are satisfied for a 150mm diameter sewer laid to a gradient not flatter than 1 in 150 where there at least 10 dwellings connected. Connection to manhole 1207 would be the preferred option, but this would require constructing a sewer across private land. Connection to manhole 0105 can be carried out by laying sewers within the public highway. These options will be explored as part of the requisition process and may require further off-site infrastructure upgrades.

Option 2 is to construct a small pumping station in the south west corner of the site to serve the development and pump the wastewater to manhole 4404 to the north of the site.

Option 1 is preferred as gravity sewers require less long term maintenance than a pumping station. The illustrative foul drainage layout has been produced based on Option 1, Figure 7. If this is not feasible one of the plots in the south west corner of the site will have to be replaced by a small pumping station.

The design has been modelled using MicroDrainage WinDes software to ensure that the strategy meets Sewers for Adoption 7th Edition requirements. Model output details can be found in Appendix B. Specific points used for the design include;

- all foul sewers with 10 or less connecting properties are modelled as 150mm diameter with a gradient no flatter than 1:80;
- sewers with more than 10 properties connected are 150mm at a slope no flatter than 1:150;
- any sewer backdrops within the strategy are no less than 1m high.

The strategy demonstrates that an acceptable solution for disposing of foul water from the development is available.

6. Conclusion

This Foul Water Drainage Strategy accompanies a planning application submitted to Swale Borough Council. The planning application is for residential development on land at The Slips, Scocles Road, Minster on Sea, Sheerness, ME12 3SN.

Minster on Sea is served by public foul and surface water sewers.

There is currently inadequate capacity within the existing foul sewerage network to accommodate the foul flow from the proposed development site. Southern Water has identified off-site improvements to existing sewers to provide sufficient capacity with a discharge point north of the site.

The topography does not allow foul water to be drained by gravity to the connection point identified by Southern Water. There are foul sewers further south which serve the development at Thistle Hill Way. There are two potential options for connecting the site to the public sewerage network:

1. Connection by gravity to the sewers south of the site
2. Connection via a pumping station and rising main to the sewer identified by Southern Water north of the site.

Option 1 is feasible and preferred as gravity sewers require less long term maintenance than a pumping station. An illustrative foul drainage layout and design has been produced based on Option 1. If this is not feasible one of the plots in the south west corner of the site will have to be replaced by a small pumping station.

This strategy provides a solution for the on-site foul drainage in line with Sewers for Adoption 7th Edition.

This strategy shows that that the development can be adequately served by foul sewers and that sufficient capacity can be made available within the local network for the disposal of wastewater.

The proposals are considered to be acceptable from a foul drainage perspective.

Appendix A - Southern Water Capacity Check



STUDY INTO THE OPTIONS FOR
FOUL DRAINAGE PROVISION AT

LAND AT SCOCLES ROAD

SCOCLES ROAD

MINSTER ON SEA

KENT

ME12 3SN

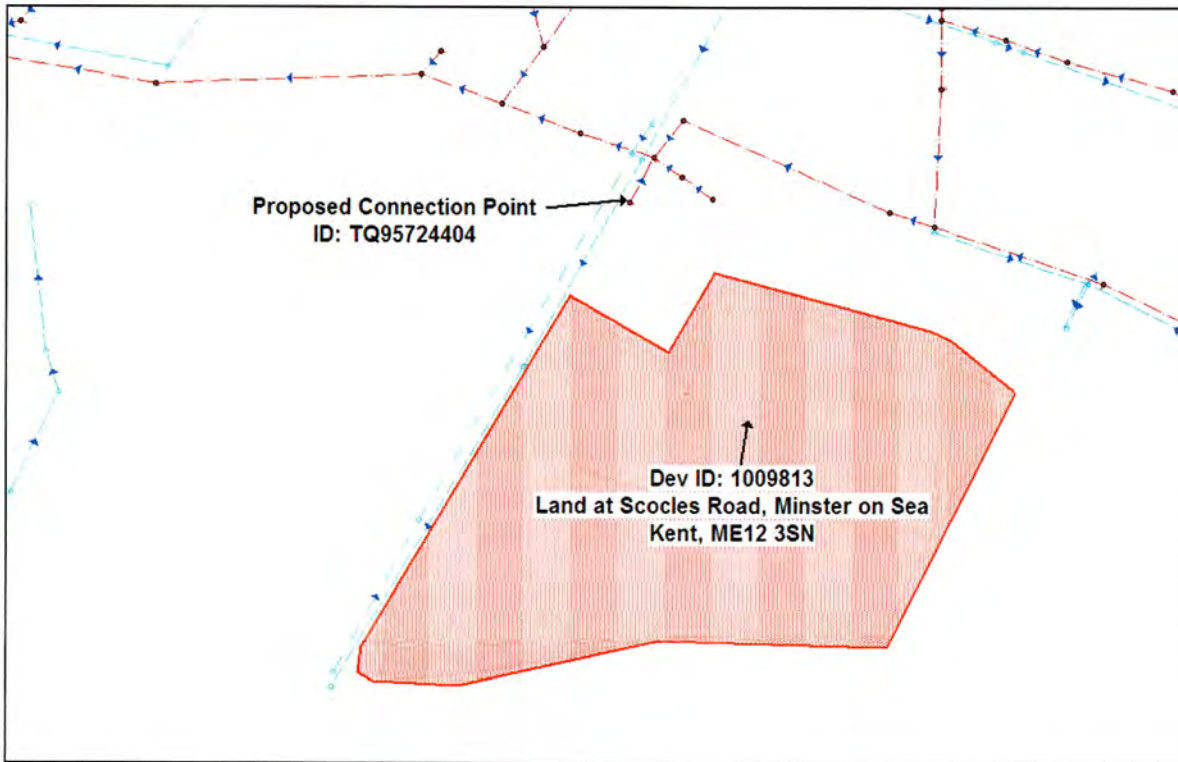
23rd NOVEMBER 2015

REQUESTED:
RMB CONSULTANTS (CIVIL ENGINEERING) LTD

I. Development Details:

The proposal is to discharge of foul flow to the local foul sewerage systems at manhole reference TQ95724404 which is located approximately 47m north of the development in Scocles Road.

Figure 1 - Proposed Development



II. Results and Conclusions:

Foul Water:

There is currently inadequate capacity within the existing foul sewerage network to accommodate the foul flow from the proposed development site. The proposed development increases local flow to the proposed connection point TQ95724404. This causes additional flooding detriment as well as increased spills at a downstream CSO (combined sewer overflow). Remedial work will be required to provide sufficient capacity to service the proposed development. Details are shown in Figures 2 and Table 1.

The nearest point in the local network where capacity is currently available is at Queensborough WTW, located approximately 5.7km south west of the proposed development site. Section 98 of the Water Industry Act 1991 provides a legal mechanism through which the appropriate infrastructure can be requested (by the developer) and provided to drain a specific location.

Figure 2- Proposed Improvements – Foul system

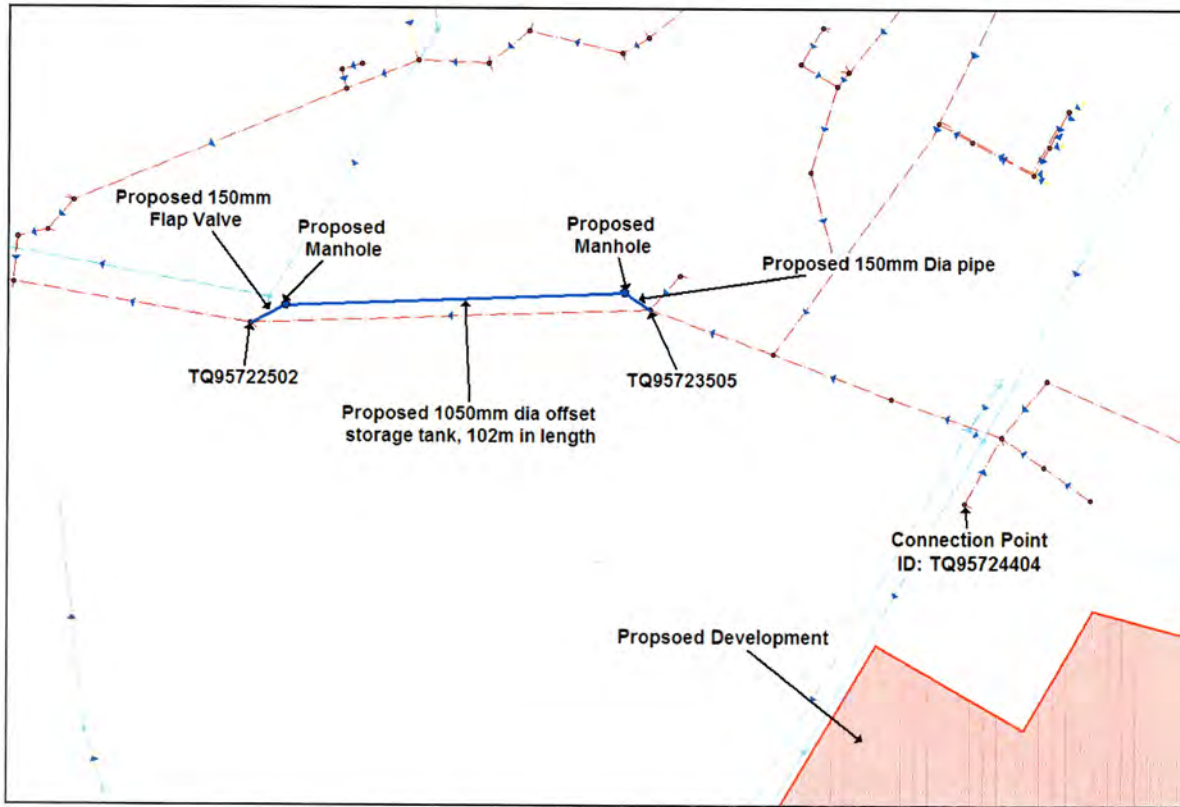


Table 1 - Proposed Improvements Schedule

U/S Manhole	D/S Manhole	Sewer Diameter (mm)		Avg. Depth (m3)	Length (m)
		Existing	Proposed		
TQ95723505	Proposed Manhole	-	150	4.01	4
Proposed Manhole	Proposed Manhole	-	1050 storage tank	4.58	102
Proposed Manhole	TQ95722502	-	150 Flap Valve	3.18	
TQ94734702	TQ9473370X	-	*30m ³ storage tank		

* Storage tank near Wards Hill Road CSO to provide an additional 30m³ volume.

Surface Water:

As a surface water capacity check has not been requested it is assumed that Surface Water will be disposed of by alternative means i.e. Soakaway or any local drainage watercourses, subject to all interested parties approval.

Before any connections are made, an application form needs to be completed and approved by Southern Water Services.

Study into the Options for Foul Water Drainage Provision along Scocles Road, Minster on Sea

Please note: - The information provided above does not grant approval for any designs /drawings submitted for the capacity analysis. The results quoted above are only valid for 12 months from the date of issue of this letter.

PUBLIC SEWER RECORD

SOUTHERN WATER



The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site.

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O.S. REF: TQ9572SW

Scale: 1:1250

Sewer Plot

WARNING: BAC pipes are constructed of Bonded Asbestos Cement
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement



Printed By: sierrob
 Southern Water MapGuide Browser
 Requested By:
 Sewer Record Extract

Date: 19-11-2015

Appendix B - Draft Foul Drainage Design

39 Cossington Road
Canterbury
Kent CT1 3HU

Scocles Road
Minster on Sea
Draft Foul Drainage Strategy

Date 16/12/15

Designed by RB

File foul network 16-12-15.MDX

Checked by



Micro Drainage

Network 2015.1

FOUL SEWERAGE DESIGN

Network Design Table for Foul - Main

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Houses	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
F1.000	65.252	1.900	34.3	0.000	5	0.0	1.500	o	150
F1.001	51.620	1.000	51.6	0.000	5	0.0	1.500	o	150
F1.002	32.854	0.219	150.0	0.000	0	0.0	1.500	o	150
F1.003	14.605	0.097	150.0	0.000	2	0.0	1.500	o	150
F1.004	22.798	0.152	150.0	0.000	2	0.0	1.500	o	150
F2.000	17.505	0.292	60.0	0.000	2	0.0	1.500	o	150
F2.001	32.627	1.862	17.5	0.000	1	0.0	1.500	o	150
F3.000	33.233	0.554	60.0	0.000	8	0.0	1.500	o	150
F2.002	13.036	0.087	150.0	0.000	0	0.0	1.500	o	150
F2.003	38.819	0.259	150.0	0.000	2	0.0	1.500	o	150
F2.004	8.311	0.569	14.6	0.000	2	0.0	1.500	o	150
F1.005	18.303	0.122	150.0	0.000	1	0.0	1.500	o	150
F4.000	20.162	0.400	50.4	0.000	3	0.0	1.500	o	150
F4.001	54.579	1.000	54.6	0.000	3	0.0	1.500	o	150
F5.000	16.712	0.600	27.9	0.000	2	0.0	1.500	o	150
F4.002	11.314	0.189	60.0	0.000	0	0.0	1.500	o	150
F4.003	51.774	1.802	28.7	0.000	4	0.0	1.500	o	150

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ Base Flow (l/s)	Σ Hse Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
F1.000	16.250	0.000	0.0	5	0.0	10	0.44	1.50	26.5	0.2
F1.001	14.350	0.000	0.0	10	0.0	15	0.48	1.22	21.6	0.5
F1.002	13.350	0.000	0.0	10	0.0	20	0.33	0.71	12.6	0.5
F1.003	13.131	0.000	0.0	12	0.0	22	0.35	0.71	12.6	0.6
F1.004	13.034	0.000	0.0	14	0.0	23	0.37	0.71	12.6	0.6
F2.000	15.950	0.000	0.0	2	0.0	8	0.27	1.13	20.0	0.1
F2.001	15.658	0.000	0.0	3	0.0	7	0.47	2.10	37.1	0.1
F3.000	14.350	0.000	0.0	8	0.0	14	0.42	1.13	20.0	0.4
F2.002	13.796	0.000	0.0	11	0.0	21	0.34	0.71	12.6	0.5
F2.003	13.709	0.000	0.0	13	0.0	23	0.36	0.71	12.6	0.6
F2.004	13.450	0.000	0.0	15	0.0	14	0.84	2.30	40.6	0.7
F1.005	12.882	0.000	0.0	30	0.0	34	0.47	0.71	12.6	1.4
F4.000	16.150	0.000	0.0	3	0.0	9	0.33	1.24	21.8	0.1
F4.001	15.750	0.000	0.0	6	0.0	12	0.40	1.19	21.0	0.3
F5.000	15.350	0.000	0.0	2	0.0	6	0.35	1.66	29.4	0.1
F4.002	14.750	0.000	0.0	8	0.0	14	0.42	1.13	20.0	0.4
F4.003	14.561	0.000	0.0	12	0.0	15	0.62	1.64	29.0	0.6

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Canterbury
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Minster on Sea
Draft Foul Drainage Strategy



Date 16/12/15

Designed by RB

File foul network 16-12-15.MDX

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Micro Drainage

Network 2015.1

FOUL SEWERAGE DESIGN

Network Design Table for Foul - Main

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Houses	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
F1.006	26.886	0.179	150.0	0.000	2	0.0	1.500	o	150
F6.000	30.774	1.970	15.6	0.000	3	0.0	1.500	o	150
F1.007	39.239	0.262	150.0	0.000	5	0.0	1.500	o	150
F1.008	37.166	0.248	150.0	0.000	3	0.0	1.500	o	150
F7.000	56.824	1.900	29.9	0.000	5	0.0	1.500	o	150
F8.000	31.372	0.579	54.2	0.000	2	0.0	1.500	o	150
F1.009	5.539	0.041	133.9	0.000	0	0.0	1.500	o	150

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ Base Flow (l/s)	Σ Hse Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)	
F1.006	12.760	0.000	0.0	44	0.0	41	0.52	0.71	12.6	2.0
F6.000	14.550	0.000	0.0	3	0.0	7	0.48	2.22	39.3	0.1
F1.007	12.580	0.000	0.0	52	0.0	44	0.55	0.71	12.6	2.4
F1.008	12.319	0.000	0.0	55	0.0	46	0.56	0.71	12.6	2.5
F7.000	15.250	0.000	0.0	5	0.0	10	0.46	1.61	28.4	0.2
F8.000	12.650	0.000	0.0	2	0.0	8	0.28	1.19	21.1	0.1
F1.009	12.071	0.000	0.0	62	0.0	47	0.60	0.76	13.4	2.9

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Manhole Schedules for Foul - Main

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
F1	17.600	1.350	Open Manhole	1200	F1.000	16.250	150				
F2	15.700	1.350	Open Manhole	1200	F1.001	14.350	150	F1.000	14.350	150	
F3	14.700	1.350	Open Manhole	1200	F1.002	13.350	150	F1.001	13.350	150	
F4	14.500	1.369	Open Manhole	1200	F1.003	13.131	150	F1.002	13.131	150	
F5	14.500	1.466	Open Manhole	1200	F1.004	13.034	150	F1.003	13.034	150	
F6	17.300	1.350	Open Manhole	1200	F2.000	15.950	150				
F7	17.400	1.742	Open Manhole	1200	F2.001	15.658	150	F2.000	15.658	150	
F8	15.700	1.350	Open Manhole	1200	F3.000	14.350	150				
F9	15.800	2.004	Open Manhole	1200	F2.002	13.796	150	F2.001	13.796	150	
								F3.000	13.796	150	
F10	15.900	2.191	Open Manhole	1200	F2.003	13.709	150	F2.002	13.709	150	
F11	15.100	1.650	Open Manhole	1200	F2.004	13.450	150	F2.003	13.450	150	
F12	14.700	1.818	Open Manhole	1200	F1.005	12.882	150	F1.004	12.882	150	
								F2.004	12.882	150	
F13	17.500	1.350	Open Manhole	1200	F4.000	16.150	150				
F14	17.100	1.350	Open Manhole	1200	F4.001	15.750	150	F4.000	15.750	150	
F15	16.700	1.350	Open Manhole	1200	F5.000	15.350	150				
F16	16.100	1.350	Open Manhole	1200	F4.002	14.750	150	F4.001	14.750	150	
								F5.000	14.750	150	
F17	16.000	1.439	Open Manhole	1200	F4.003	14.561	150	F4.002	14.561	150	
F18	14.700	1.940	Open Manhole	1200	F1.006	12.760	150	F1.005	12.760	150	
								F4.003	12.760	150	
F19	15.900	1.350	Open Manhole	1200	F6.000	14.550	150				
F20	14.700	2.120	Open Manhole	1200	F1.007	12.580	150	F1.006	12.580	150	
								F6.000	12.580	150	
F21	14.300	1.981	Open Manhole	1200	F1.008	12.319	150	F1.007	12.319	150	
F22	16.600	1.350	Open Manhole	1200	F7.000	15.250	150				
F23	14.000	1.350	Open Manhole	1200	F8.000	12.650	150				
F24	14.700	2.629	Open Manhole	1200	F1.009	12.071	150	F1.008	12.071	150	
								F7.000	13.350	150	1279
								F8.000	12.071	150	
F	0.000		Open Manhole	0		OUTFALL		F1.009	12.030	150	

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Micro Drainage

Network 2015.1

PIPELINE SCHEDULES for Foul - Main

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
F1.000	o	150	F1	17.600	16.250	1.200	Open Manhole	1200	
F1.001	o	150	F2	15.700	14.350	1.200	Open Manhole	1200	
F1.002	o	150	F3	14.700	13.350	1.200	Open Manhole	1200	
F1.003	o	150	F4	14.500	13.131	1.219	Open Manhole	1200	
F1.004	o	150	F5	14.500	13.034	1.316	Open Manhole	1200	
F2.000	o	150	F6	17.300	15.950	1.200	Open Manhole	1200	
F2.001	o	150	F7	17.400	15.658	1.592	Open Manhole	1200	
F3.000	o	150	F8	15.700	14.350	1.200	Open Manhole	1200	
F2.002	o	150	F9	15.800	13.796	1.854	Open Manhole	1200	
F2.003	o	150	F10	15.900	13.709	2.041	Open Manhole	1200	
F2.004	o	150	F11	15.100	13.450	1.500	Open Manhole	1200	
F1.005	o	150	F12	14.700	12.882	1.668	Open Manhole	1200	
F4.000	o	150	F13	17.500	16.150	1.200	Open Manhole	1200	
F4.001	o	150	F14	17.100	15.750	1.200	Open Manhole	1200	
F5.000	o	150	F15	16.700	15.350	1.200	Open Manhole	1200	
F4.002	o	150	F16	16.100	14.750	1.200	Open Manhole	1200	
F4.003	o	150	F17	16.000	14.561	1.289	Open Manhole	1200	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
F1.000	65.252	34.3	F2	15.700	14.350	1.200	Open Manhole	1200	
F1.001	51.620	51.6	F3	14.700	13.350	1.200	Open Manhole	1200	
F1.002	32.854	150.0	F4	14.500	13.131	1.219	Open Manhole	1200	
F1.003	14.605	150.0	F5	14.500	13.034	1.316	Open Manhole	1200	
F1.004	22.798	150.0	F12	14.700	12.882	1.668	Open Manhole	1200	
F2.000	17.505	60.0	F7	17.400	15.658	1.592	Open Manhole	1200	
F2.001	32.627	17.5	F9	15.800	13.796	1.854	Open Manhole	1200	
F3.000	33.233	60.0	F9	15.800	13.796	1.854	Open Manhole	1200	
F2.002	13.036	150.0	F10	15.900	13.709	2.041	Open Manhole	1200	
F2.003	38.819	150.0	F11	15.100	13.450	1.500	Open Manhole	1200	
F2.004	8.311	14.6	F12	14.700	12.882	1.668	Open Manhole	1200	
F1.005	18.303	150.0	F18	14.700	12.760	1.790	Open Manhole	1200	
F4.000	20.162	50.4	F14	17.100	15.750	1.200	Open Manhole	1200	
F4.001	54.579	54.6	F16	16.100	14.750	1.200	Open Manhole	1200	
F5.000	16.712	27.9	F16	16.100	14.750	1.200	Open Manhole	1200	
F4.002	11.314	60.0	F17	16.000	14.561	1.289	Open Manhole	1200	
F4.003	51.774	28.7	F18	14.700	12.760	1.790	Open Manhole	1200	

39 Cossington Road
Canterbury
Kent CT1 3HU

Scocles Road
Minster on Sea
Draft Foul Drainage Strategy



Date 16/12/15

Designed by RB

File foul network 16-12-15.MDX

Checked by

Micro Drainage

Network 2015.1

PIPELINE SCHEDULES for Foul - Main

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
F1.006	o	150	F18	14.700	12.760	1.790	Open Manhole	1200	
F6.000	o	150	F19	15.900	14.550	1.200	Open Manhole	1200	
F1.007	o	150	F20	14.700	12.580	1.970	Open Manhole	1200	
F1.008	o	150	F21	14.300	12.319	1.831	Open Manhole	1200	
F7.000	o	150	F22	16.600	15.250	1.200	Open Manhole	1200	
F8.000	o	150	F23	14.000	12.650	1.200	Open Manhole	1200	
F1.009	o	150	F24	14.700	12.071	2.479	Open Manhole	1200	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
F1.006	26.886	150.0	F20	14.700	12.580	1.970	Open Manhole	1200	
F6.000	30.774	15.6	F20	14.700	12.580	1.970	Open Manhole	1200	
F1.007	39.239	150.0	F21	14.300	12.319	1.831	Open Manhole	1200	
F1.008	37.166	150.0	F24	14.700	12.071	2.479	Open Manhole	1200	
F7.000	56.824	29.9	F24	14.700	13.350	1.200	Open Manhole	1200	
F8.000	31.372	54.2	F24	14.700	12.071	2.479	Open Manhole	1200	
F1.009	5.539	133.9	F	0.000	12.030		Open Manhole		0