BANKFIELD DRIVE
HOLMBRIDGE
HD9 2QP

CONSTRUCTION PHASE TEMPORARY DRAINAGE PLAN

DOCUMENT No:
21043-DSR-002-A

12th March 20254

Issue Sheet.

Prepared	Date		Checked	Date
MJM	12.03.25		MJM	12.03.25

Revisions	Comment	Date
A	Initial Issue	12.03.25

The report is based on the information that has been acquired and / or made available to Advant Engineers via the various searches and consultations undertaken as part of the Drainage Strategy. In some cases, anecdotal information has been relied upon, where documented evidence has been lacking.

The conclusions drawn in the above report are considered correct although any subsequent additional information may allow refinement of the conclusions.

All work carried out in preparing this report has utilised and is based upon Advant Engineers current professional knowledge and understanding of current UK standards and codes, technology and legislation. Changes in this legislation and guidance may occur at any time in the future and cause any conclusions to become inappropriate or incorrect.

This report has been prepared using information contained in maps and documents prepared by others. Advant Engineers can accept no responsibility for the accuracy of such information.

Table of Contents

1. Introduction

1.1. Advant Engineers has been commissioned by Orion Homes to undertake the drainage design at the scheme off Bankfield Drive in Holmbridge.

1.2. This report is to outline the temporary drainage scheme for the site and how surface water runoff can be controlled, treated and managed until such a point that the permanent drainage has been installed and the outfall connected to the public sewer.

1.3. This report should be read in conjunction with drawing 221043-121 and associated architectural and engineering drawings.

2. Existing Site

2.1. The site currently is a greenfield piece of land with no existing development and located on the end of Bankfield Drive of which it also has access, the overall site area is 6,558m² (0.656ha). (See Appendix for Impermeable area plan).

2.2. This site can be located at the following co-ordinates 412150E, 406536N and the nearest postcode is HD9 2QP and can be seen on the below extract.

2.3. Based on the soakaway tests within the site investigation the ground doe shave permeable qualities however due to the elevated nature of the site they have not been proposed within the drainage scheme (See Advant Engineers Report: 21043-DSR-001-A).

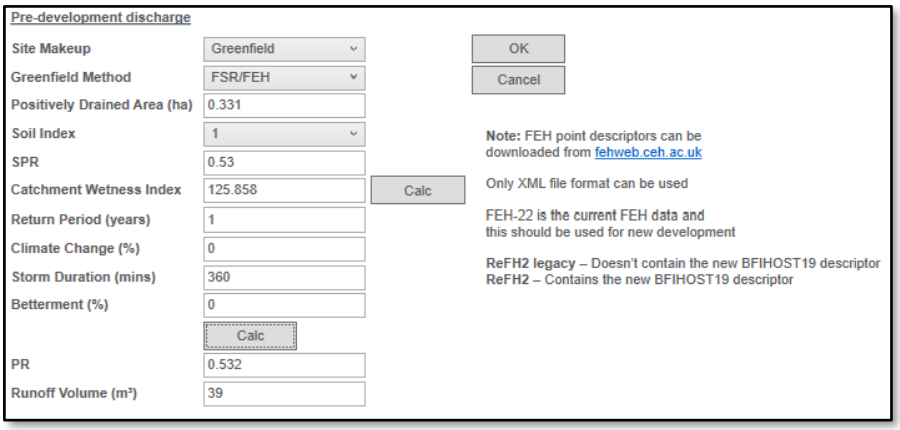
3. Construction Phase Temporary Drainage

3.1. Once the site has been stripped then the exposed ground material will allow surface water to run over the exposed surface.

3.2. We have assessed the topographical survey of the site to determine the flow paths of the surface water runoff, this is shown on drawing 22046-112. As demonstrated on this drawing all surface water flows will migrate from the north to the south of the site where the natural low point occurs, the site gradient is of a fairly steady and consistent nature with no intermediate high or low points that would capture or impeded the flow.

3.3. A series of measures are therefore required to manage, treat and store this surface water in rainfall events, we have therefore proposed a series of silt fences across the site, these should be erected across the full area of the site and removed as development progresses. The site fences will slow down the flows as they water passes through each one as well as remove any silt and debris caught up in the flows, these fences must be cleaned out after every rainfall event.

3.4. In addition to the site fences, we need to be above to capture and store the 1 in 1 year 6 hour rainfall event on site, and prevent it flowing offsite, this equates to 39.0m³ as per the calculation below using Causeway Flow software.



3.5. We have therefore provided 2 bunded areas that will capture the flows and prevent them leaving site, this is as shown on drawing 21043-121.

3.6. Each of the bunds has been sized to accommodate a minimum of 39.0m³ of storage in each one (79.0m³ in total), the maximum bund height is 1.0m and the minimum depth for storage is 300mm, this leaves 700mm before the bunds would overtop.

3.7. Once every rainfall event has passed the ponds should be pumped to the public sewer, a sump should be dug in the centre of the pond that a submersible pump can be dropped into as and when it is needed.

3.8. Once the permanent drainage has been installed then the road gullies will pick up the rainfall from the road surface, however prior to the completion of the site then construction traffic will still utilise the roads in and out of the site, therefore management and maintenance of the gullies and attenuation tank should be routinely maintained throughout the construction phase.

3.9. There are proprietary systems such the 'Muck Stopper' gully silt trap and manhole protection unit that seals off the system and keeps it clear of silt and debris, this system or similar approved should be adopted through the construction phase of the development, prior to the system being connected to the public sewer and 'going live' it should be vacuum cleaned to remove any construction debris or silt that might have entered the system.

3.10. A wheel washing station should be located at the site entrance to prevent any debris or mud leaving site, and routinely the road should be cleaned down with a road sweeper.

3.11. In the event of an emergency the contact details for Yorkshire Water and the LLFA should be made available in the site office, all workers should be trained in the operation of the temporary drainage and the importance of preventing contamination events of the watercourse.

4. Temporary Drainage Management Plan

4.1. Therefore, a schedule of inspections and maintenance needs to be undertaken until the development has been completed and all construction work has ceased, we have scheduled the tasks in the table below.

DRAINAGE ELEMENT	TASK	FREQUENCY
SILT FENCE	Clean out all debris and silt	After every rainfall event
SILT FENCE	Inspect posts on fence to ensure structural stability	Once a week
SILT FENCE	Inspect posts on fence to ensure structural stability	After every rainfall event
BUNDS	Pump out water via a siltbuster system	After every rainfall event
BUNDS	Ensure base of bund does not rise with the build-up of silt, therefore reducing the storage capacity	After every rainfall event
ROAD GULLIES	Vacuum clean the sumps in each gully to prevent silt entering the public sewer	Once a week

5. Temporary Drainage Exceedance Management Plan

5.1. Consideration also has to be given to rainfall exceedance events, the weather forecast should be checked on a daily basis, if extreme rainfall is predicted then the action plan below should be enacted.

5.2. In the eventuality that the bunds fill up and water will over top, it will flow down the site and follow Dobb Top Road and flow within the road channels until it ultimately renters the public sewer system via road gullies, we have included a silt fence along the boundary to as to minimise the amount of silt that might make its way off site.

5.3. However, the above should be avoided wherever possible and the bunds pumped to the watercourse via the siltbuster, in cases where this is insufficient then a tanker should be made available for disposal off-site.

APPENDIX

PONDING FROM POTENTIAL OVERLAND FLOWS

PUMPED TO WATER COURSE

BUND 2 TO BE REMOVED AS CONSTRUCTION PROGRESSES

AREA=80m²
MIN DEPTH=0.5m
MIN VOLUME OF BUND=40m³

PONDING FROM POTENTIAL OVERLAND FLOWS

BUND 1 TO BE REMOVED AS CONSTRUCTION PROGRESSES

AREA=130m²
MIN DEPTH=0.3m
MIN VOLUME OF BUND=39m³

SILT FENCES TO BE ERECTED AS NEEDED AND TAKEN DOWN AS CONSTRUCTION PROGRESSES, IT IS RECOGNISED THAT THE SITE WILL NOT BE STRIPPED ALL AT ONCE, AND THAT AS CONSTRUCTION PROGRESSES THE ROAD AND POSITIVE DRAINAGE INSTALLED WILL START TO PICKUP THE FLOWS

NOTES

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KEY

SILT FENCE (AS DETAIL)

RUNOFF FLOWS ALONG SURFACE

REV	AMENDMENTS	BY	DATE
A	INITIAL ISSUE	MJM	12.03.25

FOR APPROVAL

STATUS	CHK'D
PRELIMINARY	MJM
FOR COMMENT	MJM
FOR APPROVAL	MJM
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TITLE
CONSTRUCTION PHASE
DRAINAGE PLAN

DRAWN	MJM	CHK'D	MJM
SCALE	1:200 @ A1	DATE	12.03.25

JOB No	DRG No	REV
21043	121	A

YW REF
H-3-264-974

YW NOTES:

1. ALL ADOPTABLE SEWER WORKS AND MATERIAL TO BE IN ACCORDANCE WITH 'CODE FOR ADOPTION'. THE RELEVANT BRITISH/EUROPEAN AND YORKSHIRE WATER'S STANDARDS/REQUIREMENTS/LOCAL PRACTICE FOR THE ADOPTION OF SMALL SUBMERSIBLE FOUL AND SURFACE WATER PUMPING STATIONS AND KITEMARKED.
2. MANHOLE COVERS SHALL/MUST HAVE A CLEAR OPENING OF 600mm AND SHALL BE CLASS D400 TO BS EN 124 WITH 150mm DEEP FRAMES IN HIGHWAYS.
3. FILLED GROUND MUST BE FILLED AND CONSOLIDATED UNDER THE SUPERVISION AND TO THE SATISFACTION OF YORKSHIRE WATER BEFORE ANY SEWER WORKS ARE CARRIED OUT.
4. YORKSHIRE WATER IS NOT OBLIGED TO ACCEPT FILTER DRAIN/LAND DRAINAGE RUN-OFF INTO THE PUBLIC SEWER NETWORK OR ADOPTABLE DRAINAGE SYSTEM (DIRECTLY OR INDIRECTLY). AN ALTERNATIVE METHOD OF DISPOSAL OF THE LAND DRAINAGE RUN-OFF WILL THEREFORE BE REQUIRED AND YOU WILL HAVE TO LIAISE WITH THE LOCAL AUTHORITY, LAND DRAINAGE SECTION REGARDING THE DISPOSAL OF THE FILTER/LAND DRAINAGE RUN-OFF.
5. THE ADOPTABLE SEWERS SHOULD BE A MINIMUM OF 1.0m AND MANHOLES 0.5m FROM KERB FACES AND SERVICE MARGINS.
6. SEWERS MUST HAVE A 5.0m CLEARANCE FROM TREES AND HEDGES OR THE WIDTH OF THE CANOPY AT MATURE HEIGHT.
7. SEWERS TO BE LAID IN CLASS 'S' BEDDING (**150mm GRANULAR BED AND SURROUND**). WHERE DEPTH OF COVER TO TOP OF THE SEWER IS LESS THAN 1.2m IN HIGHWAYS AND VERGES (**OR LESS THAN 0.9m IN NON VEHICULAR ACCESS AREAS**) THEN A CONCRETE SLAB SHOULD BE PROVIDED ABOVE GRANULAR BED AND SURROUND.
8. BEDDING AND BACKFILL MATERIAL TO CONFORM TO THE REQUIREMENT OF WATER INDUSTRY SPECIFICATION 4-08-02 (**TABLE A2**).
9. YORKSHIRE WATER POLICY IS THAT TYPE "C" BRICK MANHOLES AND 1050mm DIAMETER MANHOLES RINGS ARE NOT PREFERRED. INSTEAD, IT IS PREFERRED THAT YOU USE A TYPE "B" MANHOLE WITH 1200mm DIAMETER OR 1500mm DIAMETER RINGS, WITH THE OPENING SITED OVER THE CHANNEL WHERE THE DEPTH OF COVER TO THE PIPE IS 1.0m - 1.5m.
10. ADOPTABLE PLASTIC SEWER PIPES TO BE BSI KITEMARKED (**CERTIFIED TO WIS 4-35-01** AND **BS EN 13476**). ADOPTABLE PLASTIC SEWER PIPES TO BE LAID IN MAXIMUM 3 METRE LENGTHS UNLESS THERE IS A SPECIFIC OPERATIONAL NEED TO LAY LONGER LENGTHS. PLASTIC CHANNEL SECTIONS IN MANHOLES ARE NOT ACCEPTABLE AND YORKSHIRE WATER WOULD REQUIRE CLAYWARE CHANNELS IN MANHOLES.
11. THE MINIMUM CRUSHING STRENGTH FOR CLAY PIPES SHOULD BE AS FOLLOWS: 100mm DIA 40kN/M, 150mm DIA 40kN/M, 225mm DIA 45kN/M, 300mm DIA 72kN/m. THE MINIMUM CRUSHING STRENGTH FOR CONCRETE PIPES SHOULD BE - (CLASS 120 TO EN 1916 / BS 5911-1 2002). PLASTIC PIPES SHOULD CONFORM TO WIS 4-35-01 AND BS EN 13476.
12. WHERE A B125 COVER AND FRAME HAS BEEN APPROVED, THIS **MUST NOT** BE COATED IN PLASTIC AND MUST HAVE LIFTING EYES SUITABLY SIZED TO ACCOMMODATE STANDARD LIFTING KEYS. SCREW DOWN COVERS ARE NOT ACCEPTABLE.
13. THERE MUST BE ENOUGH CLEARANCE AT CROSSOVERS TO ACCOMMODATE BEDDING TO BOTH PIPES, APPROX. 300mm : IF CROSSOVER IS NEAR THE ROCKER THEN THE CLEARANCE NEEDED MAY NEED TO BE INCREASED.

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KEY

- PROP S104 SW SEWER
- PROP S104 FW SEWER
- SEWER EASEMENT

ADOPTABLE MANHOLE CHAMBERS

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)	PIPE DIA (mm)
EXSW	1200	Unknown	D400	193.240	191.700	1.315	412186.580	406651.346	225
S1	1200	Type C	D400	209.461	208.100	1.211	412161.773	406512.366	150
S2	1200	Type C	D400	208.657	207.300	1.207	412182.186	406522.529	150
S3	1200	Type B	D400	208.311	206.400	1.761	412177.727	406531.563	150
S4	1200	Type B	D400	207.794	205.500	1.994	412176.291	406539.047	150/300
S7	1200	Type B	D400	205.138	202.500	2.338	412162.495	406574.114	150/300
S8	SEE DRAWING 21043-107 Rev C						412155.731	406591.922	
S9	1200	Type A	D400	201.922	197.250	4.447	412147.725	406610.469	150
S10	1200	Type A	D400	199.564	195.000	4.339	412144.053	406618.174	150
S11	1200	Type B	D400	197.890	194.800	2.865	412140.991	406624.004	150
S12	1200	Type C	D400	202.100	199.400	0.900	412143.852	406612.424	TANK
S13	1200	Type A	D400	203.929	199.300	4.329	412150.726	406593.640	TANK
S14	1200	Type A	D400	204.284	199.250	4.734	412151.592	406592.402	300
EXFW	1200	Unknown	D400	193.150	191.550	1.450	412186.583	406653.969	150
F1	1200	Type C	D400	208.525	207.150	1.225	412183.188	406526.477	150
F2	1200	Type C	D400	208.240	206.850	1.240	412180.056	406532.351	150
F3	1200	Type C	D400	207.647	206.250	1.247	412178.533	406540.967	150
F4	1200	Type C	D400	205.404	204.000	1.254	412166.871	406570.207	150
F5	1200	Type B	D400	204.052	201.000	2.902	412159.083	406590.049	150
F6	1200	Type A	D400	201.986	197.100	4.736	412149.553	406610.805	150
F7	1200	Type A	D400	199.895	194.600	5.145	412146.116	406620.421	150
F8	1200	Type B	D400	196.200	194.200	1.850	412143.157	406626.774	150

ADOPTABLE DEMARCATION CHAMBERS

MH No.	MANHOLE DIAMETER (mm)	MANHOLE TYPE	COVER TYPE	COVER LEVEL (m)	INVERT LEVEL (m)	DEPTH TO SOFFIT (m)	EASTING (m)	NORTHING (m)	PIPE DIA (mm)
PS1	600	Type E	D400	209.915	208.739	1.026	412164.280	406505.559	150
PS2	600	Type E	D400	209.025	208.013	0.862	412186.975	406517.300	150
PS3	600	Type D	B125	208.119	206.000	1.969	412171.405	406537.838	150
PS4	600	Type D	B125	205.700	203.550	2.000	412157.709	406566.321	150
PS7	600	Type E	B125	202.000	201.100	0.750	412140.763	406611.508	150
PF1	600	Type E	D400	209.007	207.905	0.952	412188.354	406517.297	150
PF2	600	Type E	B125	207.665	206.972	0.544	412171.070	406539.216	150
PF3	600	Type E	B125	205.774	204.970	0.654	412160.448	406564.659	150
PF4	600	Type E	D400	205.039	203.823	1.066	412156.007	406578.081	150
PF5	600	Type E	D400	202.039	200.685	1.203	412143.840	406606.325	150

REV	AMENDMENTS	BY	DATE
K	UPDATED TO CLIENT COMMENTS	MJM	03.03.25
J	UPDATED TO CLIENT COMMENTS	MJM	21.02.25
I	UPDATED TO LATEST LAYOUT	MJM	07.02.25
H	UPDATED TO YW COMMENTS	MJM	28.01.25
G	UPDATE TO CLIENT COMMENTS	MJM	08.05.24
F	DOUBLE GULLIES ADDED	MJM	07.11.23
E	UPDATED TO LATEST LAYOUT	MJM	17.10.23
D	MANHOLE SCHEDULE UPDATED	MJM	01.06.23
C	LAYOUT UPDATED / DRIVEWAY TANKS ADDED	MJM	28.03.23
B	TANK RELOCATED	MJM	28.02.23
A	INITIAL ISSUE	MJM	19.02.23

FOR APPROVAL

STATUS	CHK'D
PRELIMINARY	MJM
FOR COMMENT	MJM
FOR APPROVAL	MJM
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TITLE
S104 DRAINAGE LAYOUT PLAN

DRAWN	MJM	CHK'D	MJM
SCALE	1:200 @ A1	DATE	19.02.23

JOB No	DRG No	REV
21043	101	K

Complete **system**

INSPECTION CHAMBERS

You install a new drainage system and hand the site over to the following trades, with everything looking immaculate. But when you return at the end of the project, you find the inspection chambers full of mud, rubble and debris. We're on a mission to solve this problem for the groundworks industry with our MuckStopper range of products. Save on a costly cleanup operation and jetting the drains.

MANHOLE COVERS

It's no secret that silt and mud cause challenges for roads on construction sites. Silt washes into manhole chambers in the road leading to a build-up of dirt and debris in the drainage system. Road sweepers can make the problem worse, washing mud into the drains. But the problem continues below ground, hidden from view. Clearing the drains out can be an expensive and potentially risky operation.

ROAD GULLIES

Road gullies are one of the most vulnerable areas for blockages of silt and construction debris. Once blocked with silt the gullies are unable to perform their function of surface water drainage, leaving the site at risk of quickly becoming waterlogged. We are solving this common problem with an additional heavy duty silt trap - the MuckStopper RS 400 to be used during the construction process.

MUCK STOPPER®

Easy to install


MUCK
STOPPER


MUCK
STOPPER

Long Lasting

Made from galvanised mild steel to stand the test of time

Robust Handles

Easy to lift the lid off to gain access when required.

Siltproof Seal

Prevents any fine dirt and silt entering

Single Cover
MuckStopper RS-600

800mm x 800mm

Opening 548mm x 548mm

Single Cover
MuckStopper RS-675

850mm x 850mm

Opening 600mm x 600mm

Double Cover
MuckStopper RS-1220

1405mm x 800mm

Central section can be removed. Opening 1153mm x 548mm

Overview

We have designed the MuckStopper RS 675 and 1220 to solve the challenge of mud and silt entering manhole covers and clogging the drainage system below. This silt-tight barrier protects the drains from blockages.

Easy to install

Rugged and easy to fit, we designed MuckStopper RS 675 and 1220 to be installed between two courses of brickwork. It has a robust, silt-tight, removable lid to allow chamber access but prevent the ingress of silt, dirt, or anything else that can end up where it isn't supposed to be.

Saves Money

Save time and money on cleaning out and unblocking the drainage system by solving the problem at its source.

Multi-use

This product is built to last and designed to be reused on multiple sites over a number of years.

Health and Safety

Minimize the amount of time spent in confined spaces manually clearing manholes.

Road **gullies**

Road gullies are one of the most vulnerable areas for blockages of silt and construction debris. Once blocked with silt the gullies are unable to perform their function of surface water drainage, leaving the site at risk of quickly becoming waterlogged. We are solving this common problem with an additional heavy duty silt trap - the MuckStopper RS 400 to be used during the construction process.

One

Before installing the gully grating & frame, install the MuckStopper above the brickwork. Bed the MuckStopper frame in place with mortar and ensure it is level.

The MuckStopper can be installed in a concrete road gully using the same process.

Two

Place more mortar above the MuckStopper frame and complete the installation of the gully grating and frame per the manufacturer's guidelines above the MuckStopper.

Three

During the project carry out routine checks of the MuckStopper and empty any debris that it has collected, keeping the drains free of blockages.

Four

The MuckStopper should be extracted using machine lift. At the end of the project, the MuckStopper should be removed. The grating and frame can then be re-installed when setting final levels before surfacing as usual.

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