



ODYSSEY

DEVELOPING JOURNEYS

THE PADDOCKS, NORTHIAM

**PROPOSED SURFACE WATER SEWER
DIVERSION SCHEME REVIEW**



THE PADDOCKS, NORTHIAM

**PROPOSED SURFACE WATER SEWER DIVERSION SCHEME REVIEW
FOR NORTHIAM PARISH COUNCIL**

Prepared by

Odyssey

Unit 1 Pucknall Farm

Dores Lane

Braishfield

Romsey

Hampshire

SO51 0QJ

Tel: 01794 537980

Rev.A - March 2023



DOCUMENT CONTROL SHEET

Project Name The Paddocks, Northiam

Project No. 22-311

Rev	Issue Purpose	Author	Checked	Reviewed	Approved	Date
-	Draft for Client Review	AK	JHM	RS	JHM	15/03/2023
A	Client's comments incorporated	AK	JHM	BAC	JHM	17/03/2023



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Appendix B	Drainage Survey Drawings
Appendix C	'Parish Council Sewer Diversion, Plan and Section' Drawing



1.0 INTRODUCTION

1.1.1 Odyssey has been instructed by Northiam Parish Council to act as an independent consultant, to review and discuss the proposed diversion of the existing 450mm diameter private surface water (SW) sewer at The Paddocks, Northiam (called 'the site' in this report). This review will include:

- comments on the compliance with national and current standards and practice;
- a review of longitudinal and horizontal geometric layout;
- a design check on flow rates;
- other observations that may be relevant;
- an opinion on whether the SW sewer diversion is fit for purpose or will incur significant cost increase in its long-term maintenance

1.1.2 It is proposed to develop the site with a mixture of residential houses and a block of flats with associated access road, parking spaces and a landscape scheme. The diversion is proposed by the developer to enable construction of plots 33 and 34 of the proposed overall development.

1.1.3 The review of and discussion on the proposed 'diversion' will be based on the supplied documents listed below:

- 'Parish Council Private Surface Water Sewer Diversion' report number AC22065-ABS-XX-XX-RP-C-5801, Revision P02, dated June 2022 by Abstruct Consulting, reproduced as **Appendix A**;
- 'Greymoor Site Plan' drawing number GCL-012-SK.003 - forming Appendix B of the aforementioned 'Parish Council Private Surface Water Sewer Diversion' report;
- CCTV Survey of Existing Sewer – forming Appendix C of the aforementioned 'Parish Council Private Surface Water Sewer Diversion' report;
- Drainage survey drawings 47001U-01-1 issue A and 47001U-01-2 Issue A, both by Plowman Craven and dated April 2022, reproduced as **Appendix B**;
- 'Parish Council Sewer Diversion, Plan and Section' drawing number AC22065-ABS-XX-XX-SE-C-5303, revision C01, dated July 2022 by Abstruct Consulting, reproduced as **Appendix C**.



2.0 REVIEW AND DISCUSSION ON THE PROPOSED DIVERSION

2.1 Existing Sewer

2.1.1 Based on the CCTV report and information shown on the AC22065-ABS-XX-XX-SE-C-5303, revision C01 drawing the estimated gradient of the existing sewer is 1 in 19.3.

2.1.2 Based on the estimated existing gradient and diameter of the sewer, and utilising hydraulic tables; the full bore capacity of the sewer is assessed to be approximately 745 l/s, and full bore velocity to be approximately 4.65 m/s. Without the knowledge of the upstream catchment and the original design hydraulic modelling it is not possible to accurately determine the actual flows rates within the pipe. Therefore, these figures are a theoretical full pipe assessment.

2.2 Proposed Diversion

2.2.1 The proposed diversion scheme includes re-routing part of the existing sewer along new alignment. The diversion is proposed to start at an existing manhole (referenced as SWMH2 on drawing AC22065-ABS-XX-XX-SE-C-5303, revision C01) and intercept back the existing sewer some 28.8m downstream of the existing manhole when measured along the centreline of existing sewer.

2.2.2 The diversion scheme would introduce three new manholes (one of which would be constructed at the location where diversion scheme intercepts back to the existing sewer) and will require reconstruction of the existing manhole where the diversion scheme would start.

2.2.3 Any section of the existing sewer that will be abandoned should be either removed or to be grout filled to prevent subsidence or damage to buildings or services in the event of collapse. The existing manhole associated with the section to be abandoned to be made good and reconstructed appropriately to allow for the diversion.

2.2.4 Based on the proposed diversion long section (shown on drawing AC22065-ABS-XX-XX-SE-C-5303, revision C01) the total length of the diversion appears to be 39.4m, with the flattest gradient being 1 in 27.

2.2.5 Based on the proposed gradient and utilising hydraulic tables the full-bore capacity of the sewer diversion is assessed to be approximately 625 l/s (meaning that the diversion provides for 84% of the existing theoretical capacity) and full-bore velocity to be approximately 3.9 m/s.



2.2.6 Without the benefit of a detailed hydraulic modelling, it is not possible to accurately foresee if such reduction in full bore capacity would cause any issues or flooding in the upstream system. However, the supplied CCTV report with associated 47001U-01-1 issue A and 47001U-01-2 Issue A drawings notes that between manholes SWMH3 and SWMH2C (which are both located upstream of the diversion scheme) the surface water sewer has a diameter of 300mm with two 150mm diameter lateral connections and there are no other lateral connections downstream of manhole SWMH2C. It is therefore reasonable to assume that this 300mm diameter pipe would be a restricting factor to the flows within the existing system upstream of the diversion. Consequently, the proposed diversion is unlikely to adversely affect the system capacity and as a result should not increase the risk of flooding.

2.2.7 It appears that the proposed diversion sets the pipes at a minimum distance of approximately 1.38 m measured between the pipe (assumed to be its internal face) and the external wall of the proposed plot 34. It would be more desirable to indicate a distance between the outer edge of the proposed diverted pipe and the foundations of plot 34, and such distance ideally should be not less than 1.2 m.

2.2.8 Drawing AC22065-ABS-XX-XX-SE-C-5303, revision C01 calls for foundations of plot 34 to be taken below the levels of the diverted sewer. Such approach follows the best practice standard and is often requested by water companies when diverting or building close to the public sewer to protect the pipeline from increased loading from the building.

2.2.9 The diversion long section shown on drawing AC22065-ABS-XX-XX-SE-C-5303, revision C01 indicates that the minimum cover (depending on the land use above the pipe) will be achieved and specifies the pipe surround accordingly, all of which complies with the current best practice standard.

2.2.10 The diversion scheme will introduce three new manholes and the length of the sewer will increase by some 10.6m, all of which should not add any significant costs to the long term maintenance of the sewer.

2.2.11 Considering all the above Odyssey consider the proposed diversion scheme would be fit for purpose.



3.0 SUMMARY

3.1.1 It is proposed to develop the site with a mixture of residential houses and a block of flats with associated access road, parking spaces and a landscape scheme. The SWS diversion is proposed by the developer to enable construction of plots 33 and 34 of the proposed overall development.

3.1.2 The proposed diversion would increase the length of the sewer by approximately 10.6m and the overall gradient of the diverted section would decrease to approximately 1 in 27 against the existing 1 in 19.3. As a result the full bore capacity of the diverted section would be approximately 625 l/s compared to the existing approximate full bore capacity of 745 l/s – meaning that the diversion provides for 84% of the existing theoretical capacity.

3.1.3 The flow into the surface water sewer is restricted by the upstream pipe of 300mm diameter with two 150mm diameter lateral connections. There are no other lateral connections downstream of manhole SWMH2C. It is therefore reasonable to conclude that this 300mm diameter pipe would be a restricting factor to the flows within the existing system upstream of the diversion. Consequently, the proposed diversion is unlikely to adversely affect the system capacity and as a result should not increase the risk of flooding.

3.1.4 The proposed depth of the plot foundations in relation to the diverted sewer follows the best practice principles, however it would be desirable to indicate a distance between the outer edge of the proposed diverted pipe and the foundations of plot 34, and such distance ideally should be not less than 1.2m.

3.1.5 The diversion scheme will introduce three new manholes and the length of the sewer will increase by some 10.6 m, all of which should not add any significant costs to the long term maintenance of the sewer.

3.1.6 Considering all the above Odyssey consider the proposed diversion scheme would be fit for purpose.

APPENDIX A

'Parish Council Private Surface Water Sewer Diversion' Report

Structural & Civil Engineers

ABSTRACT Consulting Limited
The Highland Suite
Great Hollenden Business Centre
Mill Lane, Underriver
Sevenoaks
Kent TN15 0SQ
Tel: 01732 838050
abstract-consult.com

The Paddock, Northiam

Parish Council Private Surface Water Sewer Diversion

Abstract Project No. AC22065

Report No. AC22065-ABS-XX-XX-RP-C-5801

Revision P02

Date June 2022

Issue, Revision & Check			
P01	17/06/22		Signed
P02	22/06/22		
By	Martin Howell	MEng (Hons)	
Checked	Matthew Woods	BEng (Hons)	
Approved	Matthew Woods	BEng (Hons)	

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AC22065-ABS-XX-XX-RP-C-5801

A22065: The Paddock, Northiam – Parish Council Private Surface Water Sewer Diversion

1. Introduction

ABSTRACT Consulting have been appointed by Greymoor to undertake a drainage design for the proposed development, this incorporates the diversion of a private sewer which crosses the site. This report is intended to describe the works to be undertaken in diverting the Parish Council Private Surface Water Sewer.

The site is located at land to the south of The Paddock, Northiam, TN31 6QF, ordnance survey grid TQ827251. A site location plan has been provided in Appendix A.

The site is currently an open grassed field. The proposals are to develop the site with 34 dwellings along with associated access, parking, and landscaping. A proposed site layout can be found in Appendix B.

2. Existing Sewer

A 450Ø Surface Water Sewer, owned and maintained by the Parish Council crosses the northern part of the site from the adjacent housing (to the north of the site) to the watercourse to the east of the site. The sewer was constructed in 1999 by Beazer Homes Ltd to mitigate potential surface water flooding resulting from their development. The sewer crosses numerous land ownership parcels in addition to the development site.

The existing sewer has been surveyed by Plowman Craven Ltd in April 2022 (see CCTV Survey in Appendix C) and its location is shown on the plan in Appendix D and extracted below in Figure 1.

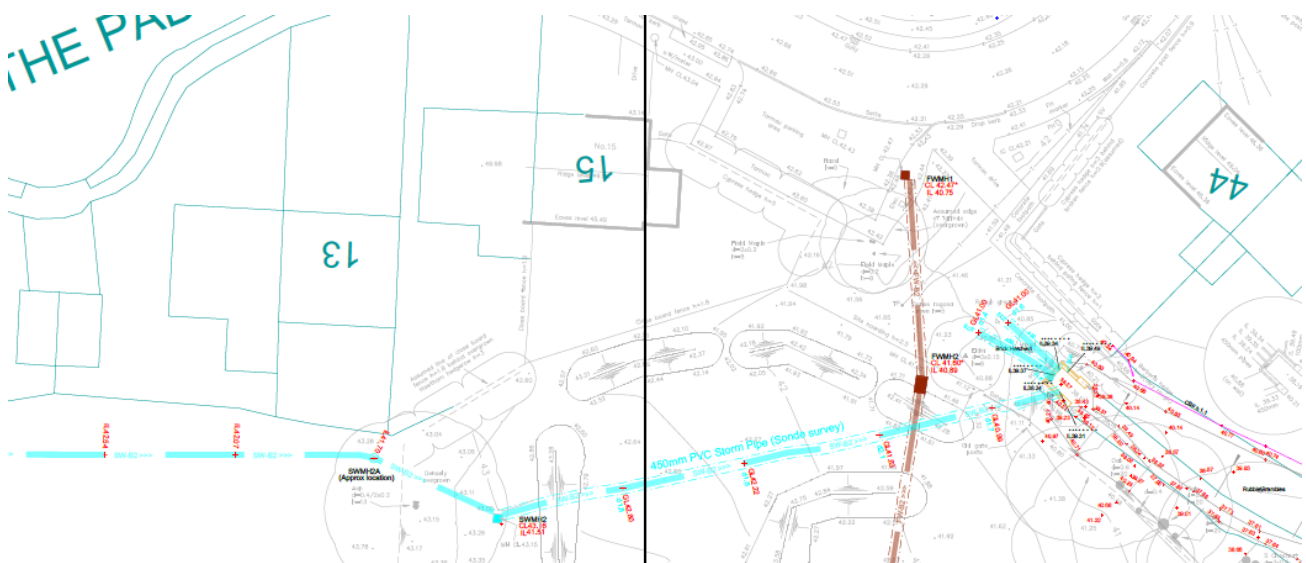


Figure 1 – Extract from CCTV Survey showing Sewer Location

As can be seen from the above the sewer enters the site from the west before discharging into the watercourse to the east. The line of the sewer as surveyed is different to that shown on the 1999 agreement between Northiam Parish Council, Beazer Homes Ltd, and Various Landowners, this route is shown in Figure 2 overleaf.



Figure 2 – 1999 Agreement Sewer Alignment

The 1999 Agreement refers to a Certificate being provided by the Council's Engineer to confirm the drain has been correctly installed. We have not seen a copy of this certificate but assume one must have been issued for the Commuted Sum to have been paid.

The Agreement provides for the right for any party to call for an Easement along the legal line of the sewer, but no Easement was ever put in place. Any Easement now called for by any of the parties would not cover the as-built line of the drain, hence requiring a diversion.

3. Sewer Condition

The sewer has been CCTV Surveyed (see Appendix C) and shows the majority of the sewer to be in generally good condition. There is a section between chambers SWMH3 and SWMH2C where there are a number of cracks, root ingresses and some settled deposits, however this is upstream of the proposed works and as such this section is outside of the scope of this report.

Maintenance of the drain is currently the responsibility of Northiam Parish Council, who by an Agreement dated 13th January 1999, have been provided with a commuted sum for this purpose. We understand that no maintenance has been undertaken since the drain was installed in 1999.

4. Proposed Sewer Diversion

The survey results show that the surface water sewer is not on the line originally proposed and provided for in the 1999 Agreement and as such no legal right exists for it to remain on its current line. Furthermore, one of the proposed dwellings from the consented scheme (Plot 34) will sit on top of the as built line of the sewer.

A physical diversion or amendment to the 1999 Agreement is therefore required.

Given the length of time which has passed since the original Agreement was put in place and the number of parties involved, Greymoor propose to divert the sewer to accommodate the proposed development as shown in Figure 3 overleaf to avoid building over the sewer, and provide a new easement to the Parish Council covering the line of the diverted sewer.

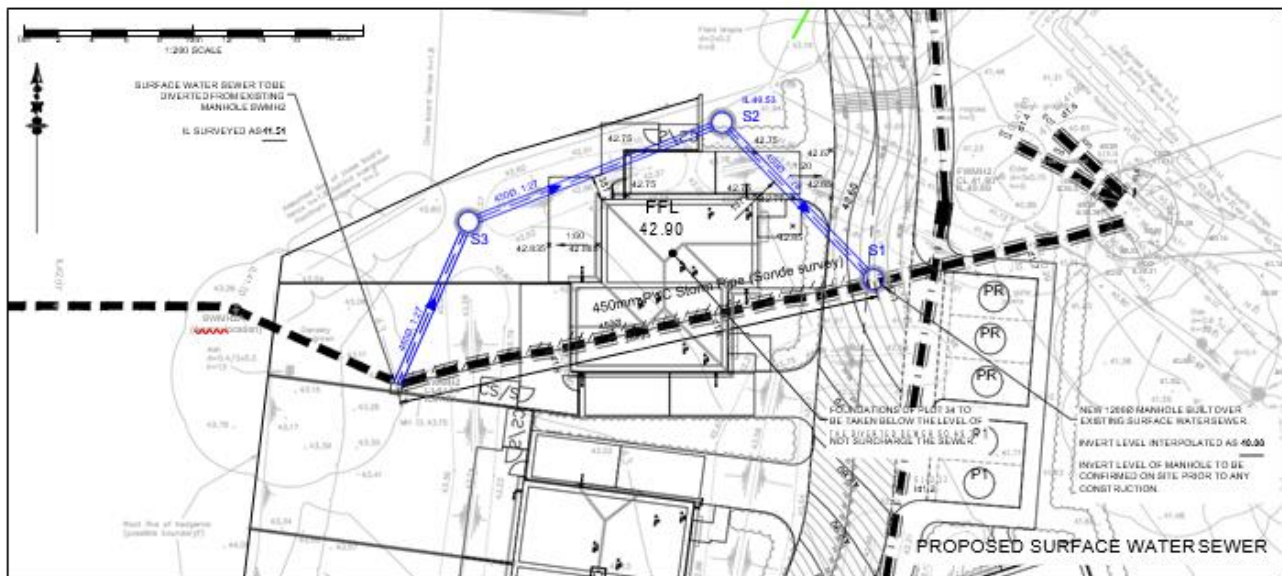


Figure 3 – Proposed Sewer Diversion Alignment

The length of the existing sewer to be diverted is approximately 28.8m based on survey information and falls at a constant gradient, following the existing ground level down towards the watercourse.

The total length of the proposed sewer diversion is 39.4m, therefore the sewer length will be increased post diversion and as such the gradients will change slightly. However the pipe will still be steeply sloping for a 450Ø sewer, which would normally be laid flatter than the 1:27 gradient shown. This steeper gradient than usual is due to existing ground levels.

Due to the proximity of the new sewer line to plot 34, the foundations of plot 34 will be taken below the invert level of the sewer so as not to surcharge the pipe.

A plan showing the new diversion route and a long section along can be found in Appendix D.

The new sewer will be built as per the details in Sewers for Adoption 7th Edition, construction details for this can be found in Appendix E.

As can be seen from the long section, all sections of the pipe will have the minimum cover required to comply with the requirements of the Code for Adoption, therefore no additional protection is required and a granular bed and surround is proposed for the full length of the diverted sewer.

5. Conclusions

The site is currently a greenfield with a Parish Council owned Private Surface Water Sewer crossing the north of the site.

An agreement dated 13th January 1999 gives rights to the construction of the sewer and the right to call for an easement for ongoing maintenance of the sewer. No easement was put in place.

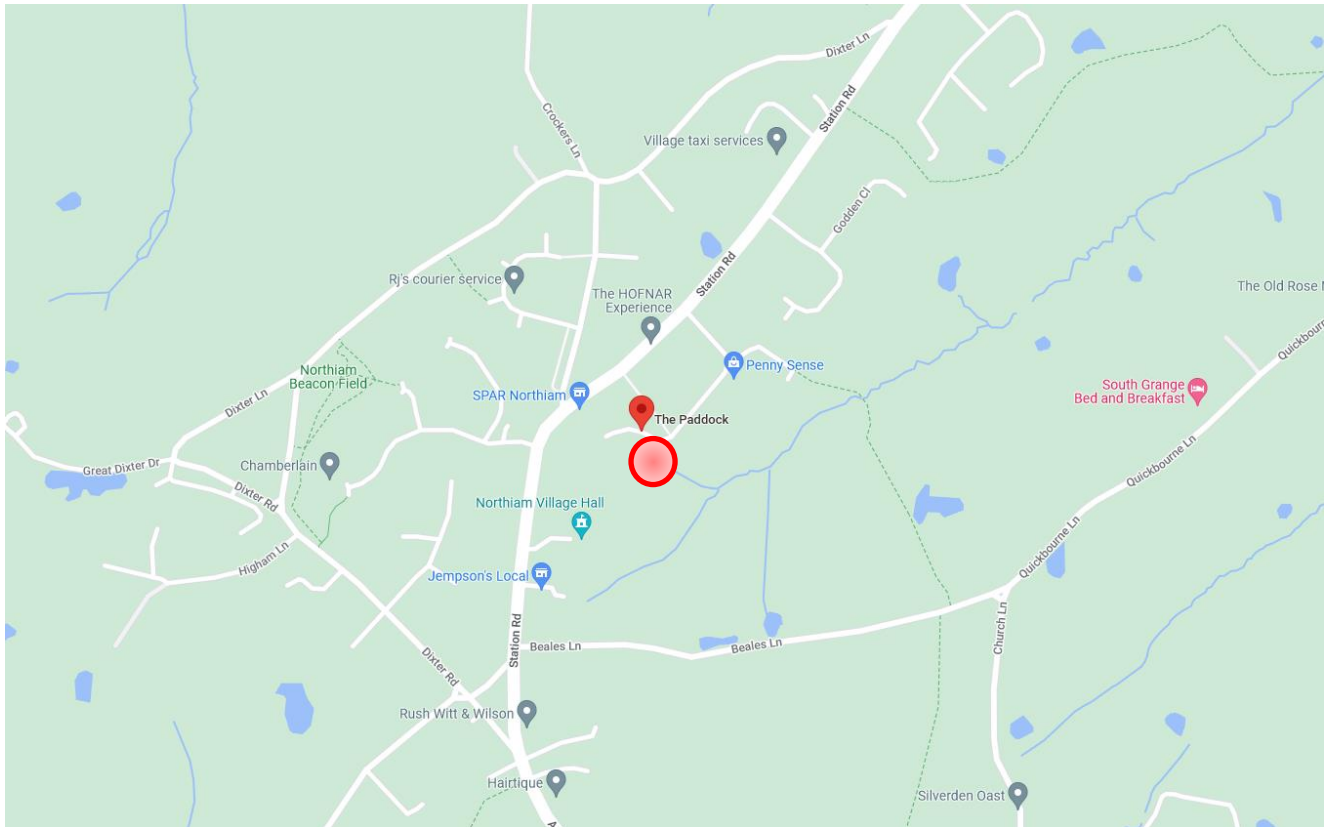
The recent topographical survey shows that the sewer has not been constructed on the line permitted by the 1999 Agreement and conflicts with the proposed development layout.

Greymoor therefore propose to divert the sewer on to a line that does not conflict with the proposed development and provide an easement for the Parish Council, along the diverted line, to continue their maintenance obligation.

The proposed diversion will be built to Sewers for Adoption standards and will maintain existing invert levels so as to minimise the effect on the existing flows.

The additional maintenance costs of the diverted sewer are minimal compared to the ongoing maintenance costs of the entire sewer length. The new construction will mean no maintenance costs will be required along this 39m length of sewer for the foreseeable future. The costs of diverting the sewer will be borne by Greymoor Construction Ltd and therefore no commuted sum towards ongoing maintenance is proposed.

Appendix A – Site Location Plan



Site Location



AC22065-ABS-XX-XX-RP-C-5801

Appendix B – Proposed Site Layout

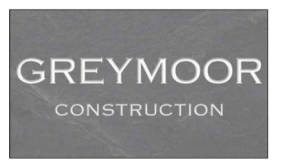


ACCOMMODATION SCHEDULE :

HOUSETYPE	NO.	SQM	SQF	PLOT NOS.
1BFOG	1	50	538	5
2BF1	2	61	656.6	11, 12
2BF2	2	79	850	13, 14
2BH1	9	79	850.4	2, 3, 7, 8, 16, 17, 18, 33, 34
3BH	4	93	1001	25, 26, 27, 28
3BH1	8	84	904.2	9, 15, 19, 21, 22, 23, 31, 32
3BH1.1	1	84	904.2	10
3BH1+	2	84	904.2	20, 24
3BH2	2	93	1001	4, 6
3BH6	1	84	904.2	1
4BH1	2	97	1044	29, 30

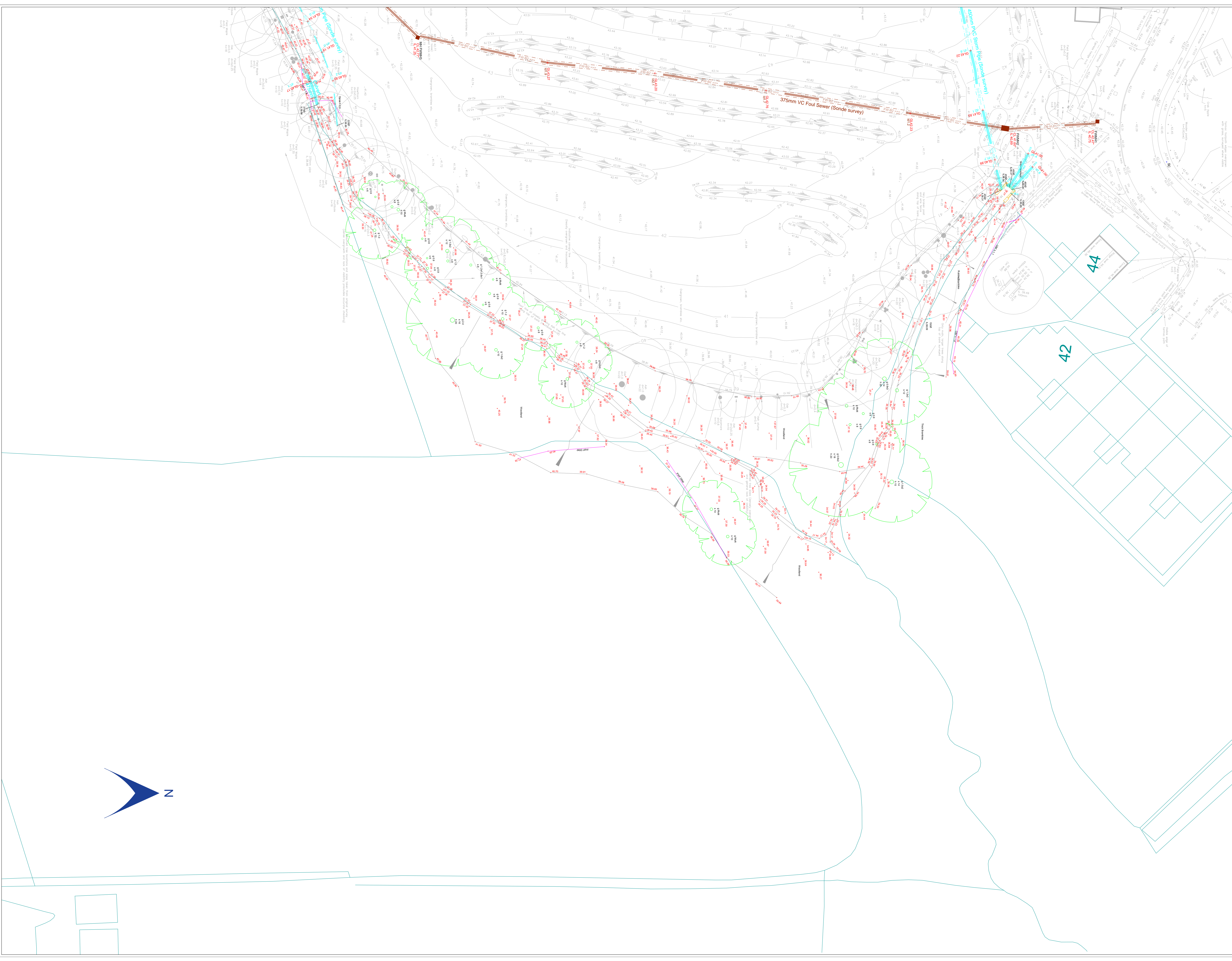
LEGEND :

- P34 Allocated Parking Space
- PU Unallocated Parking Space
- PV Visitors Parking Space
- CS Cycle Store/ Shed



AC22065-ABS-XX-XX-RP-C-5801

Appendix C – CCTV Survey of Existing Sewer



ASSET ABBREVIATIONS

AB	Abandoned	G	Gully
ACD	Assumed Connection	GL	Ground Level
BD	Backdrop	IC	Inspection Chamber
BL	Backlog	IL	Invert Level
BK	Backlog Level	IS	Invert Depth
BR	Branch	IS	Invert Level
CC	Concrete Chamber	NVO	No Visible Outlet
CI	Cast Iron	PE	Polyethylene
CL	Cover Level	PVC	Polyvinyl Chloride
d	depth of service	RI	From records
DI	Ductile iron	SD	Sump Depth
DIS	Disused	SI	Soun Iron
DP	Down Pipe	ST	Steel
DC	Drainage Channel	UNK	Unknown
DT	Disconnecting Trap	UTL	Unable to Lift
EQS	End of Pipe	UTC	Unable to Check
EOT	End of Trace	VC	Verified to Survey
FLD	Flooded	WL	Water Level
FOS	Full of Silt	WW	Water valve

ASSET LEGEND

FOUL WATER	COMBINED
SURFACE WATER	UNKNOWN
PIPE DESTRUCTION	OPEN
WATER	PIPE MAN
WATER RECORD MARK	

PAS 128 QUALITY LEVELS

QC-D Asset added from records
 QC-C Asset added from site reconnaissance
 QC-B Asset added to assumed depth
 QC-A Asset located horizontally by one technique only
 QC-EP Same as QC-A including GPR data processing
 QC-2 Asset located horizontally and vertically by one technique only
 QC-1 Asset located horizontally and vertically by multiple techniques
 QC-A Asset located by physical verification

Where details are recorded at inspection covers such as depths, pipe sizes, number of joints etc. these are classified as QC-A.

UNDERGROUND SERVICES SURVEY CAVEATS

The user or recipient of the survey data understands and acknowledges that the data provided may contain errors or omissions and the user or recipient assumes full responsibility for any risks or damages resulting from, arising from or in connection with any use of the captured information.

Multiple methods of detection have been used in the location and identification of underground assets. The results are not infallible due to several factors outside of Plowman Craven's control. With any uncertainty in the provided data we strongly recommend trial excavations to be carried out to confirm exact position and depth. All reasonable effort has been made in searching available records drawings but the completeness of the underground asset drawings cannot be guaranteed. Damage designation is made on site from the surface via visual inspection.

LINE & LEVEL SURVEY CAVEATS

CCTV sonde tracing:
 Sewer routes may have been used in the location of the sewers. The results are not infallible and should be viewed in the light of a normally expected trial excavation accuracy of +/- 10% of the depth of the traced route.

Cross-section survey
 Where possible a survey system incorporating a grapple has been used to determine the alignment of the sewers. The expected accuracy of this data is +/- 5%.

LEGEND

12.00" Solids Tracing tolerance zone
 Level taken from Clients Topo

NOTES

The geospatial framework is existing topographic survey data provided to the client as digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg. All Plowman Craven data has been referenced to the grid contained within the drawing file.

The geospatial framework is existing Ordnance Survey data provided to the client as part of the digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg.

The following (RED) text is taken from the border information of the digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg and should be taken into account when this drawing is used for any future work.

DISCLAIMERS:

1. Survey work on this site was originally carried out in 2003, and this survey has been undertaken on a number of occasions since then.
2. Where the survey was field checked in 2015, it was found that a small number had been mislocated by up to 100mm.
3. The geospatial framework is existing Ordnance Survey data provided to the client as part of the digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg. All Plowman Craven data has been referenced to the grid contained within the drawing file.
4. A further warning is that the accuracy of the data may be affected by the accuracy of the original data.

Due to the inherent instability of paper materials, drawings plotted on paper may be stretched and distorted - dimensions scaled from paper plots should therefore be treated with caution.

This drawing has been produced for the purpose of the original commissioning agent Plowman Craven and is not to be used for any other purpose. Plowman Craven Limited will accept no responsibility for details that are subsequently found to be the responsibility of other parties or for any errors or omissions that have occurred since the date of issue.

ISSUES & REVISIONS

Issue	Details	By	Date
April 1	Provisional Issue	JD	01/03/2022
A	Final Issue	JD	29/04/2022

This survey is commensurate with band F accuracy, as outlined in the RICS survey detail accuracy banding table.

All levels are in metres and are above Ordnance Survey Newlyn Datum derived by multiple network RTK GPS observations.

The survey grid shown on this drawing is the Ordnance Survey (OS) National Grid. The grid was established by multiple network RTK GPS observations. The topographic detail is referenced to the grid at coordinates 533645E, 175200N. The scale factor for this detail is 1. Unless otherwise stated, levels have been taken to finished surface.

All quoted dimensions are in metres.

Drawing units are metres.

SHEET LAYOUT

CLIENT
Greymoor
 Unit M Great Hollands Business Centre
 Mill Lane
 Hildenborough
 Kent TN15 0SG

PROJECT TITLE
The Paddock Northam

Drainage Survey

PRESENTATION SCALE 1:200 @ A0

DATE OF ORIGINAL SURVEY February 2022

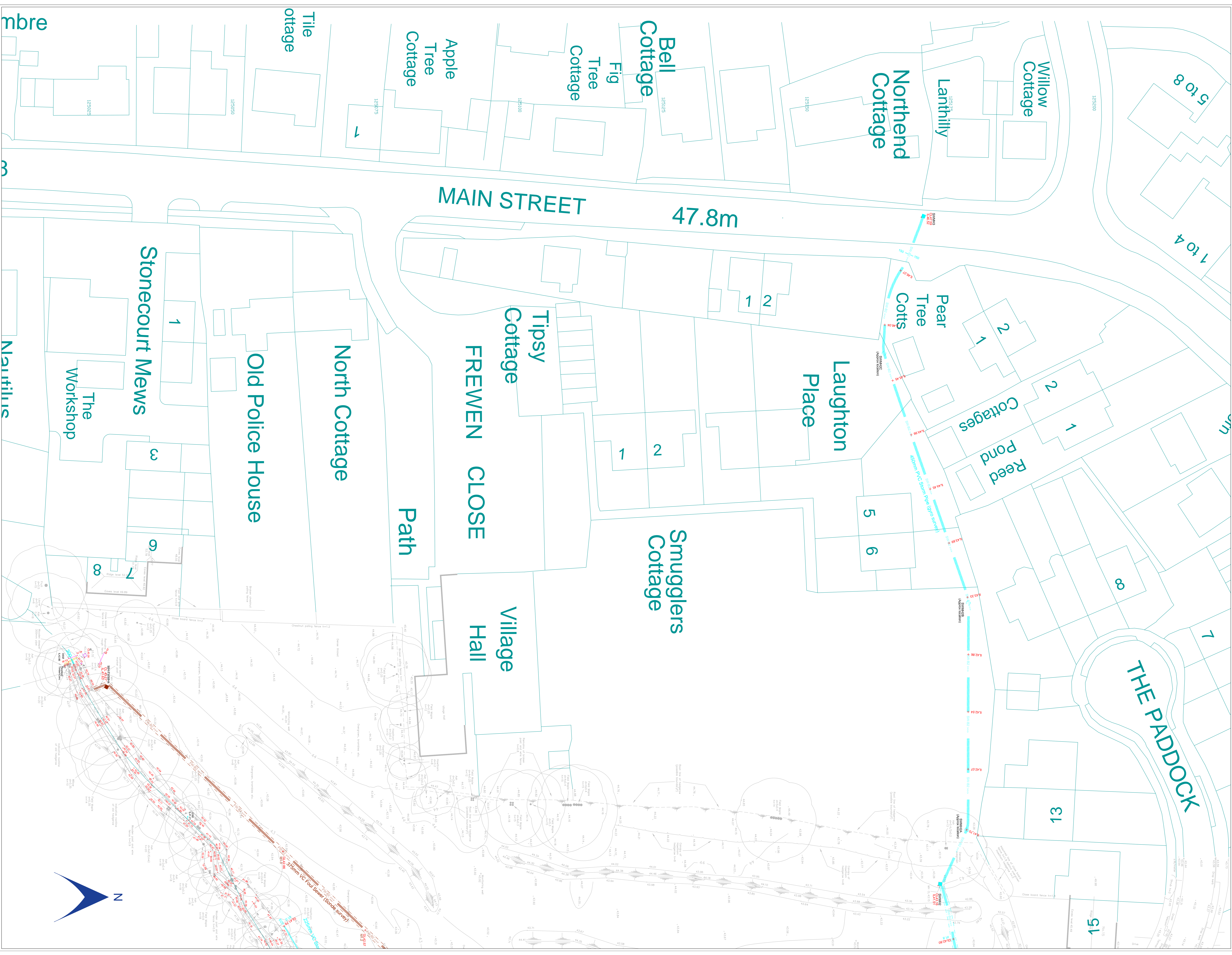
PC PROJECT No. 47001 **CHECKED** JD

DRAWING No. **ISSUE**

47001U-01-1 **A**

Plowman Craven
 Plowman Craven House
 2 Leas Business Park
 Lower Luton Road
 Harpenden
 Hertfordshire
 AL5 5EQ
 Tel: +44 (0)1542 765566
 Email: post@plowmancraven.co.uk
 Web: www.plowmancraven.co.uk

115 Southwark Bridge Road
 London
 SE1 0AX
 Tel: +44 (0)207 450 7700



ASSET ABBREVIATIONS

AB	Abandoned	G	Gully
ACS	Assumed Connection	GL	Ground Level
BD	Backdrop	IC	Inspection Chamber
BLK	Backlog Level	IL	Invert depth
BLK	Blocked	IL	Invert Level
BR	Branch	NVO	No Visible Outlet
CC	Capped	PE	Polyethylene
CC	Concrete Chamber	PVC	Polyvinyl Chloride
CI	Cast Iron	RI	From records
CL	Cover Level	SD	Spring Depth
d	depth of service	SI	Soun Iron
DI	Ductile Iron	ST	Steel
DIS	Disused	UNK	Unknown
DP	Down Pipe	URL	Unable to Lift
DIC	Drainage Channel	UTD	Unable to Open
DT	Disconnecting Trap	UTS	Unable to Survey
EC	End of Pipe Trace	VC	Victrolid Clay
EOT	End of Trace	WL	Water Level
FLD	Flooded	WW	Water valve
FOS	Full of Silt		

ASSET LEGEND

FOUL WATER	COMBINED
SURFACE WATER	UNKNOWN
PIPE DIRECTION	OPEN
WATER	PIPE MAN
WATER RECORD MARK	

PAS 128 QUALITY LEVELS

QL: Q Asset added from records
 QL: C Asset added from site reconnaissance
 QL: A Asset drawn to assumed depth
 QL: B Asset located horizontally by one technique only
 QL: CIP Same as 'B' including GPR data processing
 QL: D Asset located horizontally and vertically by one technique only
 QL: E Same as 'D' including GPR data processing
 QL: F Asset located horizontally and vertically by multiple techniques
 QL: A Asset located by physical verification

UNDERGROUND SERVICES SURVEY CAVEATS

The user or recipient of the survey data understands and acknowledges that the data provided may contain errors or omissions and the user or recipient assumes full responsibility for any risks or damages resulting from, arising from or in connection with any use of the captured information.

Multiple methods of detection have been used in the location and identification of underground assets. The results are not infallible due to several factors outside of Plowman Craven's control. With any uncertainty in the provided data, it is strongly recommended that excavations to be carried out to confirm exact position and depth. All reasonable effort has been made in searching available records drawings but the completeness of the underground asset drawings cannot be guaranteed. Damage designation is made on site from the surface via visual inspection.

LINE & LEVEL SURVEY CAVEATS

CCTV under tracing:
 Sewer routes may have been used in the location of the sewers. The results are not infallible and should be viewed in the light of it is normally expected that the operators accuracy is +/- 10% the depth of the traced sewer.

Scoposcopic survey:
 Where possible a survey system incorporating a gyroscope has been used to determine the alignment of the sewers. The expected accuracy of this data is +/- 5.0%.

LEGEND

12.00" Level taken from Clients Topo

NOTES

The private network is existing topographic survey data provided to the client as digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg. All Plowman Craven data has been referenced to the grid contained within the drawing file.

The private network is existing Ordnance Survey data provided to the client as part of the digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg.

The following (RED) text is taken from the border information of the digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg:

Point A of particular importance. It should be taken into account when the drawing is used for any future work.

- ISSUES & REVISIONS**
- | Issue | Details | By | Date |
|---------|-------------------|----|------------|
| Issue 1 | Provisional Issue | JD | 01/10/2022 |
| Issue A | Final Issue | JD | 29/04/2022 |

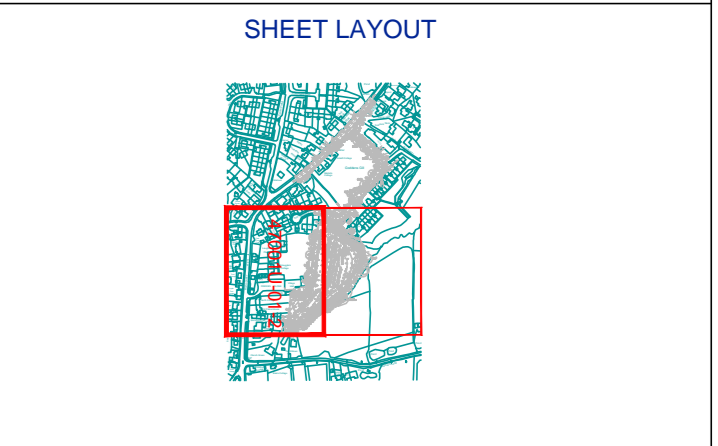
This survey is commensurate with band F accuracy, as outlined in the RICS survey detail accuracy banding table.

All levels are in metres and are above Ordnance Survey Newlyn Datum derived by multiple network RTK GPS observations.

The survey grid shown on this drawing is the Ordnance Survey (OS) National Grid. The grid was established by multiple network RTK GPS observations. The geographic detail is referenced to the grid at coordinates 53.6546E, 1.170200N. The scale factor for this detail is 1. Unless otherwise stated, levels have been taken to finished surface.

All quoted dimensions are in metres.

Drawing units are metres.



CLIENT
 Greymoor
 Unit M Great Hollands Business Centre
 Mill Lane
 Hildenborough
 Kent TN15 0SG

PROJECT TITLE
 The Paddock Northam

Drainage Survey
 PRESENTATION SCALE: 1:200 @ A0
 DATE OF ORIGINAL SURVEY: February 2022
 PC PROJECT No.: 47001 CHECKED: JD
 DRAWING No.: ISSUE
 47001U-01-2 A

Plowman Craven

Plowman Craven House 115 Southwark Bridge Road
 2 Lee Business Park London SE1 0AX
 Lower Luton Road Harpenden Hertfordshire AL5 5EQ
 Tel: +44 (0)1542 765556 Tel: +44 (0)207 450 7700
 Email: post@plowmancraven.co.uk
 Web: www.plowmancraven.co.uk



Project

Project Name: PLOWMAN CRAVEN - THE Paddock
Project Description: CCTV
Project Status: Issued
Project Date: 25/02/2022
Inspection Standard: MSCC5 Sewers & Drainage GB (SRM5 Scoring)





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PLOWMAN CRAVEN - THE PADDOCK		25/02/2022

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Section: 1; SW2 > HEADWALL (SW2X)	1
Section: 2; SW2A > SW2 (SW2AX)	3
Section: 3; SWMH2B > SW2A (SWMH2BX)	5
Section: 7; MH.3 > MAINRUN (MH.3X)	7
Section: 10; SWMH3 > SWMH2C (SWMH3X)	9
Section: 11; SWMH2C > SWMH2B (SWMH2CX)	12



Project Information

Project Name	Project Number	Project Date
PLOWMAN CRAVEN - THE PADDOCK		25/02/2022

Client

Company: Plowman Craven
Contact: Nicky Berg
Street: 2 Lea business Park
Town or City: Lower Luton Road
County: Heartforshire
Post Code: AL5 5EQ
Phone: 01582 765566
Mobile: 07802 865557
Email: NBerg@plowmancraven.co.uk



Site

Company: Plowman Craven
Street: Goddens Gill
Town or City: Northiam
County: Rye
Post Code: TN31 6QE



Contractor

Company: McAllister Group
Contact: Dave Paul
Department: Operations
Street: Unit B, Horton Trading Estate, Stanwell Road
Town or City: Horton
County: Slough
Post Code: SL3 9PF
Phone: 01753 376 884
Email: dave.paul@mcallistersgroup.com





Scoring Summary

Project Name PLOWMAN CRAVEN - THE PADDOCK	Project Number	Project Date 25/02/2022
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Structural Defects

Section	PLR	Grade	Description
All inspected pipes are in an acceptable structural condition (< grade 3).			

Service / Operational Condition

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.

Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.

Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
10	SWMH3X	4	Settled deposits, hard or compacted, 20% cross-sectional area loss

Abandoned Surveys

Section	PLR	Description
All inspections complete, none are abandoned.		

Information

These scoring summaries are based on the SRM grading from the WRc.



Section Profile

Project Name PLOWMAN CRAVEN - THE PADDOCK	Project Number	Project Date 25/02/2022
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Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
7	MH.3	MAIN RUN	25/02/2022	THE PADDOCK	Vitrified clay	10.17 m	10.17 m

Total: 1 Inspection x Circular 150 mm = 10.17 m Total Length and 10.17 m Inspected Length

Circular, 300 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
10	SWMH3	SWMH2C	13/04/2022	GODDENS GILL	Vitrified clay	23.14 m	23.14 m

Total: 1 Inspection x Circular 300 mm = 23.14 m Total Length and 23.14 m Inspected Length

Circular, 450 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	SW2	HEADWALL	25/02/2022	THE PADDOCK	Polyvinyl chloride	42.47 m	42.47 m
2	SW2A	SW2	25/02/2022	THE PADDOCK	Polyvinyl chloride	9.92 m	9.92 m
3	SWMH2B	SW2A	25/02/2022	THE PADDOCK	Polyvinyl chloride	38.91 m	38.91 m
11	SWMH2C	SWMH2B	13/04/2022	GODDENS GILL	Polyvinyl chloride	45.29 m	45.29 m

Total: 4 Inspections x Circular 450 mm = 136.59 m Total Length and 136.59 m Inspected Length**Total: 6 Inspections = 169.90 m Total Length and 169.90 m Inspected Length**



Section Summary

Project Name PLOWMAN CRAVEN - THE PADDOCK	Project Number	Project Date 25/02/2022
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Number of sections	6
Total length of sections	169.90 m
Total length of inspected sections	169.90 m
Total length of abandoned inspections	0.00 m
Number of abandoned inspections	0
Number of section inspection photos	9
Number of section inspection videos	6
Number of section inspection scans	0
Number of section inclination measurements	0

PLR:	SW2X	Upstream Node:	SW2
Inspection Direction:	Upstream	Downstream Node:	HEADWALL
Inspected Length:	42.47 m	Dia/Height:	450 mm
Total Length:	42.47 m	Material:	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	OC	Start node type, other special chamber, reference number: HEADWALL, HEADWALL
2	0.00	WL	Water level, 5% of the vertical dimension
3	42.47	MHF	Finish node type, manhole, reference number: SW2

PLR:	SW2AX	Upstream Node:	SW2A
Inspection Direction:	Upstream	Downstream Node:	SW2
Inspected Length:	9.92 m	Dia/Height:	450 mm
Total Length:	9.92 m	Material:	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node type, manhole, reference number: SW2
2	0.00	WL	Water level, 5% of the vertical dimension
3	9.92	MHF	Finish node type, manhole, reference number: SW2A

PLR:	SWMH2BX	Upstream Node:	SWMH2B
Inspection Direction:	Upstream	Downstream Node:	SW2A
Inspected Length:	38.91 m	Dia/Height:	450 mm
Total Length:	38.91 m	Material:	Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node type, manhole, reference number: SW2A
2	0.00	WL	Water level, 5% of the vertical dimension
3	38.91	MHF	Finish node, manhole, reference: SWMH2B, Screen Text should read SWMH2B not SW3



Section Summary

Project Name PLOWMAN CRAVEN - THE PADDOCK	Project Number	Project Date 25/02/2022
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PLR: MH.3X	Upstream Node: MH.3
Inspection Direction: Downstream	Downstream Node: MAIN RUN
Inspected Length: 10.17 m	Dia/Height: 150 mm
Total Length: 10.17 m	Material: Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node type, manhole, reference number: MH.3
2	0.00	WL	Water level, 5% of the vertical dimension
3	8.60	LD	Line deviates down, SLIGHT
4	10.17	BRF	Finish node type, major connection without manhole, reference number: MAIN RUN, MAIN RUN REACHED

PLR: SWMH3X	Upstream Node: SWMH3
Inspection Direction: Downstream	Downstream Node: SWMH2C
Inspected Length: 23.14 m	Dia/Height: 300 mm
Total Length: 23.14 m	Material: Vitrified clay

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SWMH3
2	0.00	WL	Water level, 5% of the vertical dimension
3	0.82	CL	Crack, longitudinal at 11 o'clock
4	3.94	WL	Water level, 10% of the vertical dimension
5	4.94	WL	Water level, 15% of the vertical dimension
6	6.21	CL	Crack, longitudinal at 1 o'clock
7	6.71	CN	Connection other than junction at 2 o'clock, 150mm dia
8	6.71	CN	Connection other than junction at 9 o'clock, 150mm dia
9	6.81	DEC	Settled deposits, hard or compacted, 20% cross-sectional area loss
10	8.53	WL	Water level, 5% of the vertical dimension
11	13.64	RFJ	Roots, fine at joint
12	17.31	RFJ	Roots, fine at joint
13	18.12	RFJ	Roots, fine at joint
14	19.13	WL	Water level, 10% of the vertical dimension
15	20.58	WL	Water level, 20% of the vertical dimension
16	21.86	RFJ	Roots, fine at joint
17	23.14	MHF	Finish node, manhole, reference: SWMH2C

PLR: SWMH2CX	Upstream Node: SWMH2C
Inspection Direction: Upstream	Downstream Node: SWMH2B
Inspected Length: 45.29 m	Dia/Height: 450 mm
Total Length: 45.29 m	Material: Polyvinyl chloride

No.	m+	Code	Observation
1	0.00	MH	Start node, manhole, reference: SWMH2B
2	0.00	WL	Water level, 0% of the vertical dimension
3	45.29	MHF	Finish node, manhole, reference: SWMH2C

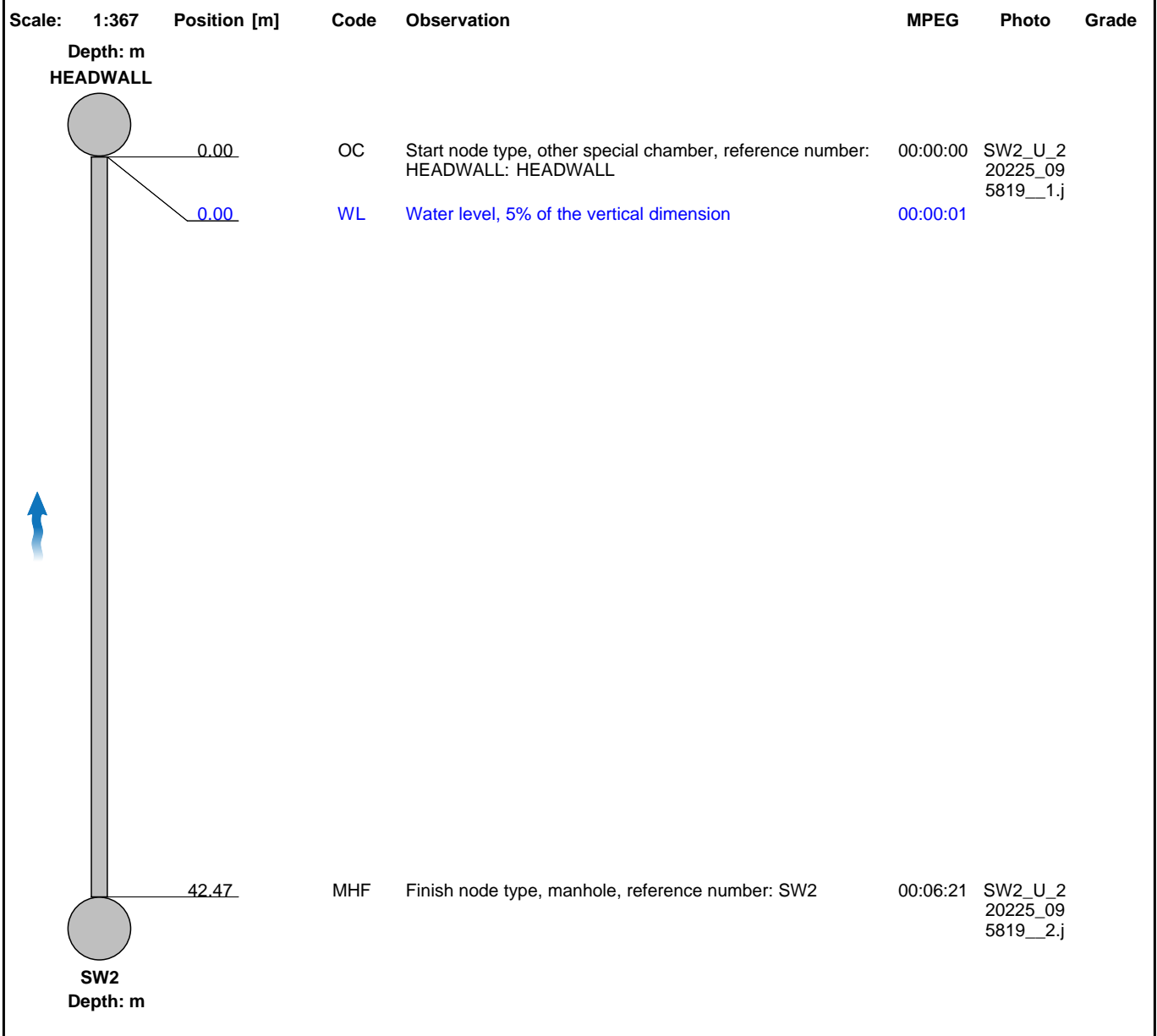


Section Inspection - 25/02/2022 - SW2X

Item No. 1	Insp. No. 1	Date 25/02/22	Time 9:58	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SW2X
Operator D SMOOTHY		Vehicle ML68 XMS		Camera Main Line	Preset Length 1.00 m	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Northiam Rye	Inspection Direction:	Upstream	Upstream Node:	SW2
Road:	The Paddock	Inspected Length:	42.47 m	Upstream Pipe Depth:	
Location:	Difficult access	Total Length:	42.47 m	Downstream Node:	HEADWALL
Surface Type:	Woodland	Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	450 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:
 Recommendations: CLICK TO OPEN THIS SECTION



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0



Section Pictures - 25/02/2022 - SW2X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	SW2X		



SW2_U_220225_095819__1.jpg, 00:00:00, 0.00 m
Start node type, other special chamber, reference number:
HEADWALL, HEADWALL



SW2_U_220225_095819__2.jpg, 00:06:21, 42.47 m
Finish node type, manhole, reference number: SW2



Section Inspection - 25/02/2022 - SW2AX

Item No. 2	Insp. No. 2	Date 25/02/22	Time 10:35	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SW2AX
Operator D SMOOTHY		Vehicle ML68 XMS		Camera Main Line	Preset Length 1.00 m	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Northiam Rye	Inspection Direction:	Upstream	Upstream Node:	SW2A
Road:	The Paddock	Inspected Length:	9.92 m	Upstream Pipe Depth:	
Location:	Difficult access	Total Length:	9.92 m	Downstream Node:	SW2
Surface Type:	Woodland	Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	450 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:

Recommendations:

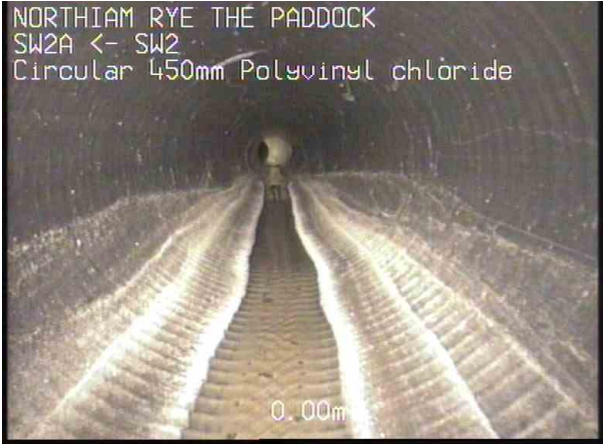


Scale:	1:86	Position [m]	Code	Observation	MPEG	Photo	Grade																					
<div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>Depth: m</p> <p>SW2</p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">0.00</td> <td style="width: 10%;"></td> <td style="width: 15%; text-align: center;">MH</td> <td style="width: 40%;">Start node type, manhole, reference number: SW2</td> <td style="width: 10%; text-align: center;">00:00:00</td> <td style="width: 10%;"></td> <td style="width: 5%;"></td> </tr> <tr> <td style="text-align: center;">0.00</td> <td></td> <td style="text-align: center;">WL</td> <td style="color: blue;">Water level, 5% of the vertical dimension</td> <td style="text-align: center;">00:00:01</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">9.92</td> <td></td> <td style="text-align: center;">MHF</td> <td>Finish node type, manhole, reference number: SW2A</td> <td style="text-align: center;">00:01:03</td> <td></td> <td></td> </tr> </table> </div>								0.00		MH	Start node type, manhole, reference number: SW2	00:00:00			0.00		WL	Water level, 5% of the vertical dimension	00:00:01			9.92		MHF	Finish node type, manhole, reference number: SW2A	00:01:03		
0.00		MH	Start node type, manhole, reference number: SW2	00:00:00																								
0.00		WL	Water level, 5% of the vertical dimension	00:00:01																								
9.92		MHF	Finish node type, manhole, reference number: SW2A	00:01:03																								
Construction Features				Miscellaneous Features																								
Structural Defects				Service & Operational Observations																								
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade																			
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0																			



Section Pictures - 25/02/2022 - SW2AX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Upstream	SW2AX		



SW2A_U_220225_103517__3.jpg, 00:00:00, 0.00 m
Start node type, manhole, reference number: SW2



SW2A_U_220225_103517__4.jpg, 00:01:03, 9.92 m
Finish node type, manhole, reference number: SW2A



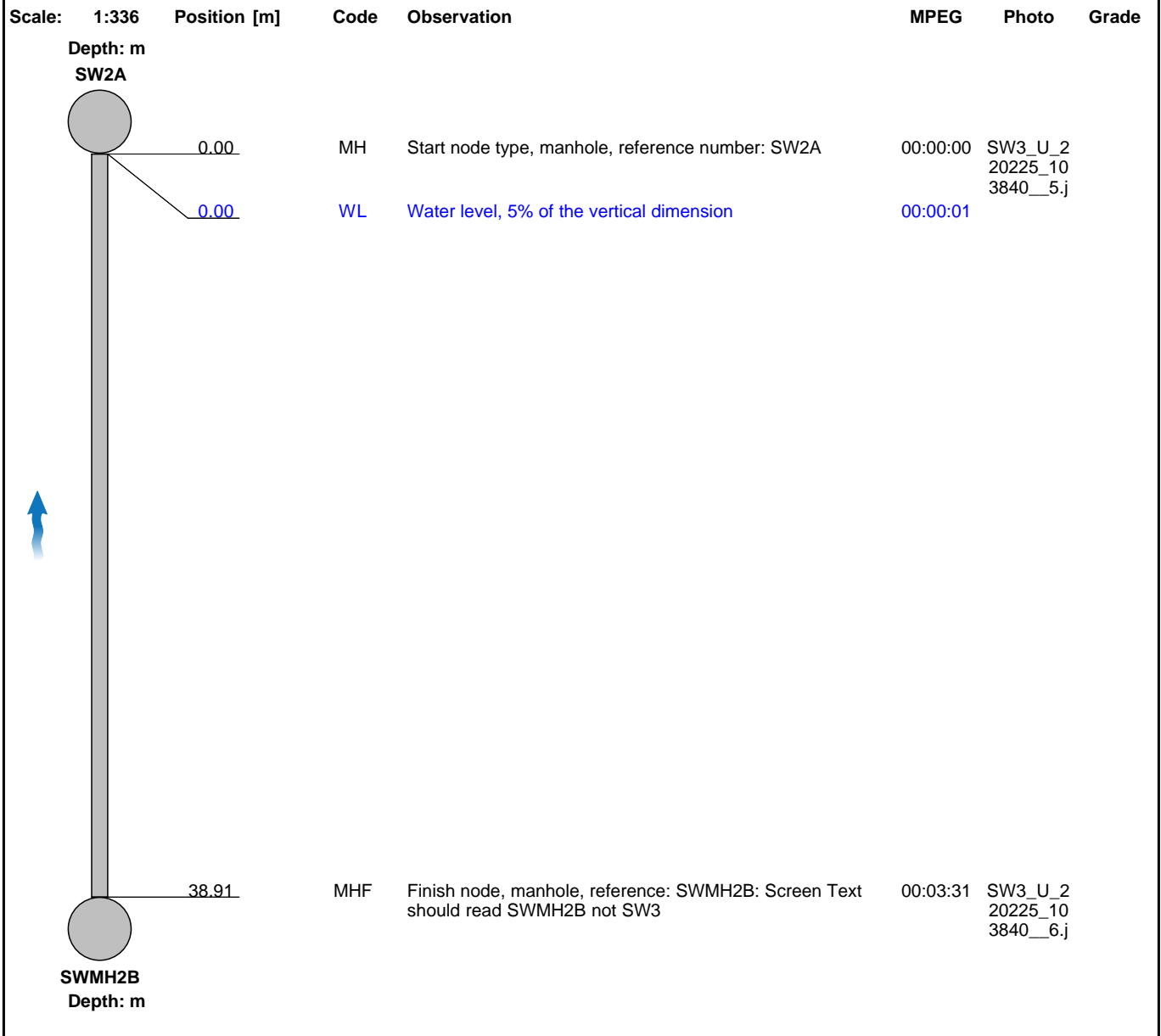
Section Inspection - 25/02/2022 - SWMH2BX

Item No. 3	Insp. No. 3	Date 25/02/22	Time 10:38	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR SWMH2BX
Operator D SMOOTHY		Vehicle ML68 XMS		Camera Main Line	Preset Length 1.00 m	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Northiam Rye	Inspection Direction:	Upstream	Upstream Node:	SWMH2B
Road:	The Paddock	Inspected Length:	38.91 m	Upstream Pipe Depth:	
Location:	Difficult access	Total Length:	38.91 m	Downstream Node:	SW2A
Surface Type:	Woodland	Joint Length:	1.00 m	Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	450 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments:

Recommendations:

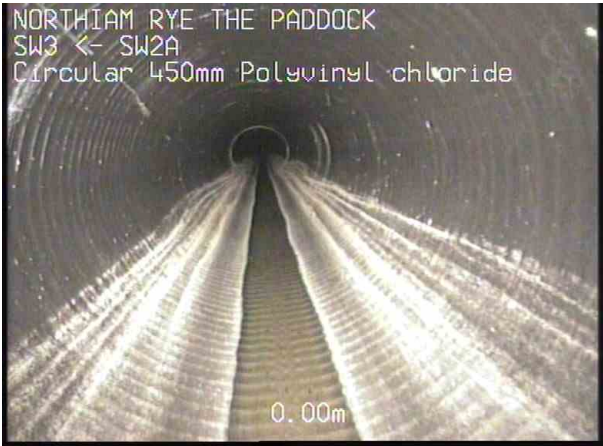


Construction Features				Miscellaneous Features					
Structural Defects				Service & Operational Observations					
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0



Section Pictures - 25/02/2022 - SWMH2BX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Upstream	SWMH2BX		



SW3_U_220225_103840__5.jpg, 00:00:00, 0.00 m
Start node type, manhole, reference number: SW2A



SW3_U_220225_103840__6.jpg, 00:03:31, 38.91 m
Finish node, manhole, reference: SWMH2B, Screen Text should read SWMH2B not SW3



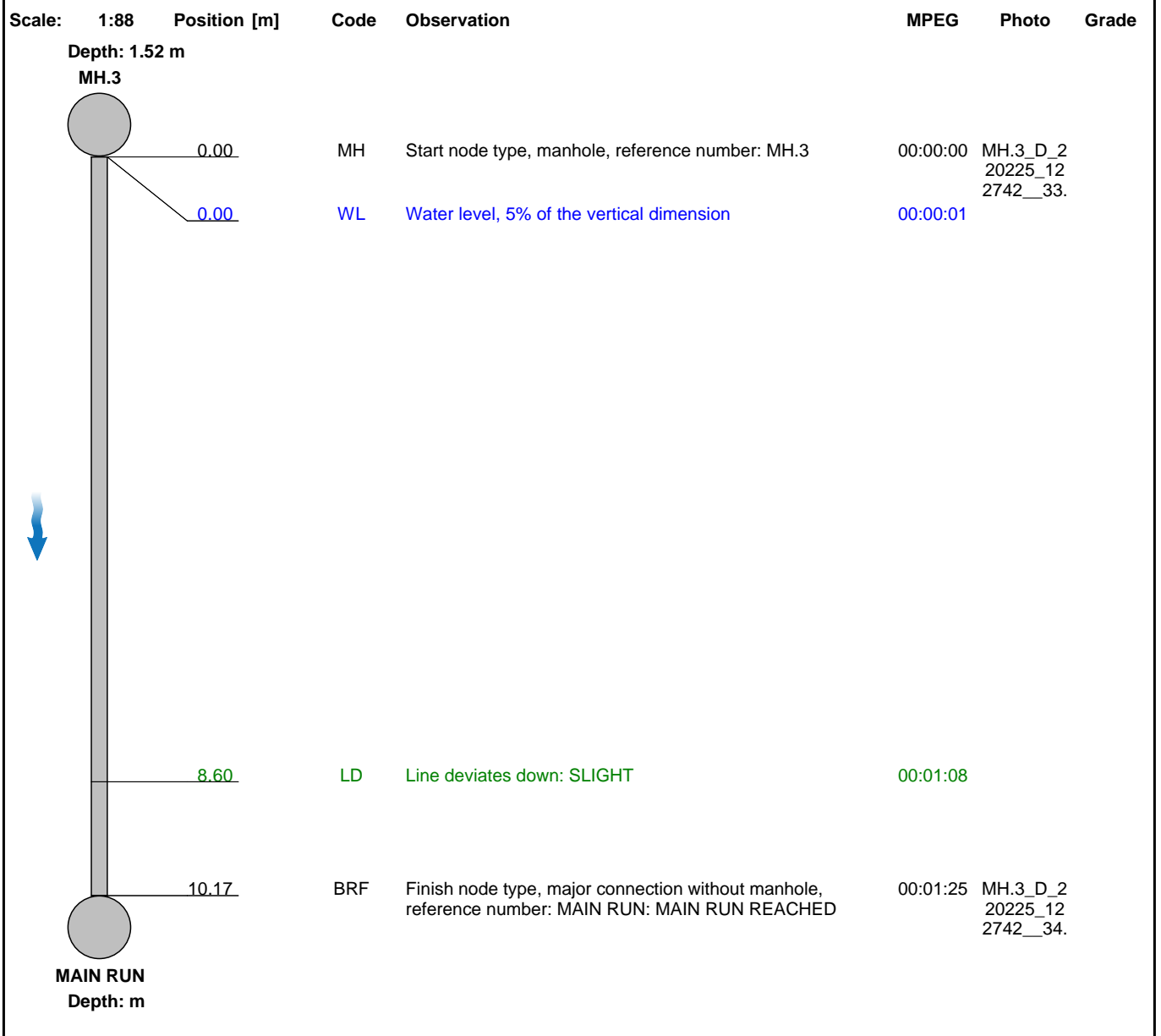
Section Inspection - 25/02/2022 - MH.3X

Item No. 7	Insp. No. 7	Date 25/02/22	Time 12:27	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned No	PLR MH.3X
Operator D SMOOTHY		Vehicle ML68 XMS		Camera Push Rod	Preset Length 0.60 m	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Northiam Rye	Inspection Direction:	Downstream	Upstream Node:	MH.3
Road:	The Paddock	Inspected Length:	10.17 m	Upstream Pipe Depth:	1.520 m
Location:	Road	Total Length:	10.17 m	Downstream Node:	MAIN RUN
Surface Type:	Asphalt Highway	Joint Length:	0.60 m	Downstream Pipe Depth:	
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining		

Comments: **WEB PROJECT**
CLICK TO OPEN THIS SECTION

Recommendations:



Construction Features				Miscellaneous Features					
Structural Defects				Service & Operational Observations					
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

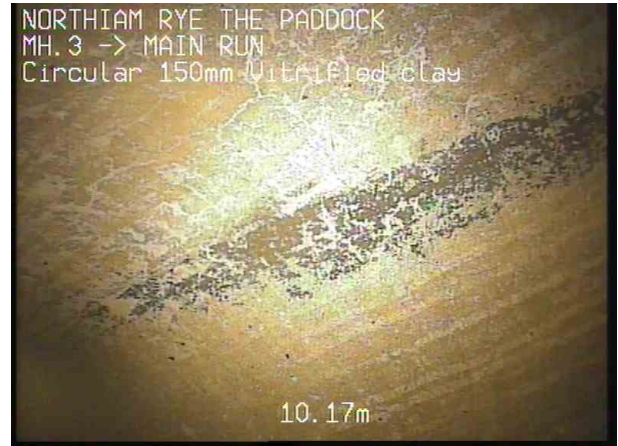


Section Pictures - 25/02/2022 - MH.3X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
7	Downstream	MH.3X		



MH.3_D_220225_122742__33.jpg, 00:00:00, 0.00 m
Start node type, manhole, reference number: MH.3



MH.3_D_220225_122742__34.jpg, 00:01:25, 10.17 m
Finish node type, major connection without manhole, reference number: MAIN RUN, MAIN RUN REACHED



Section Inspection - 13/04/2022 - SWMH3X

Item No. 10	Insp. No. 1	Date 13/04/22	Time 12:30	Client's Job Ref 789016	Weather No Rain Or Snow	Pre Cleaned No	PLR SWMH3X
Operator SW		Vehicle PF69 YUV		Camera Small Crawler	Preset Length 0.50 m	Legal Status Highways Drainage	Alternative ID Not Specified

Town or Village:	Northium	Inspection Direction:	Downstream	Upstream Node:	SWMH3
Road:	Goddens Gill	Inspected Length:	23.14 m	Upstream Pipe Depth:	1.070 m
Location:	Fields, farmland etc	Total Length:	23.14 m	Downstream Node:	SWMH2C
Surface Type:	Asphalt Highway	Joint Length:	1.00 m	Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	300 mm		
Flow Control:	No flow control	Material:	Vitrified clay		
Year Constructed:	1900	Lining Type:	No Lining		
Inspection Purpose:	Other purpose	Lining Material:	No Lining		

Comments: SURVEY COMPLETE
 Recommendations: ROOT CUTTING REQUIRED.



Scale:	1:183	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 1.07 m							
SWMH3							
		0.00	MH	Start node, manhole, reference: SWMH3	00:00:00		
		0.00	WL	Water level, 5% of the vertical dimension	00:00:00		
		0.82	CL	Crack, longitudinal at 11 o'clock	00:00:12		2 / 2
		3.94	WL	Water level, 10% of the vertical dimension	00:00:29		
		4.94	WL	Water level, 15% of the vertical dimension	00:00:35		
		6.21	CL	Crack, longitudinal at 1 o'clock	00:00:44		2 / 2
		6.71	CN	Connection other than junction at 2 o'clock, 150mm dia	00:00:50		
		6.71	CN	Connection other than junction at 9 o'clock, 150mm dia	00:00:50		
		6.81	DEC	Settled deposits, hard or compacted, 20% cross-sectional area loss	00:00:54	Sec_4_Ins p_1_SWMH3X_3579	4
		8.53	WL	Water level, 5% of the vertical dimension	00:01:07		
		13.64	RFJ	Roots, fine at joint	00:01:27		2
		17.31	RFJ	Roots, fine at joint	00:01:42		2
		18.12	RFJ	Roots, fine at joint	00:01:46		2
		19.13	WL	Water level, 10% of the vertical dimension	00:01:50		
		20.58	WL	Water level, 20% of the vertical dimension	00:01:57		



Section Inspection - 13/04/2022 - SWMH3X

Item No. 10	Insp. No. 1	Date 13/04/22	Time 12:30	Client's Job Ref 789016	Weather No Rain Or Snow	Pre Cleaned No	PLR SWMH3X
Operator SW		Vehicle PF69 YUV		Camera Small Crawler	Preset Length 0.50 m	Legal Status Highways Drainage	Alternative ID Not Specified

Scale:	1:183	Position [m]	Code	Observation	MPEG	Photo	Grade
		21.86	RFJ	Roots, fine at joint	00:02:04		2
		23.14	MHF	Finish node, manhole, reference: SWMH2C	00:02:12		

SWMH2C

Depth: 0.00 m

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	10.0	0.9	20.0	2.0	7	5.0	0.5	11.0	4.0



Section Pictures - 13/04/2022 - SWMH3X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
10	Downstream	SWMH3X	789016	-



Sec_4_Insp_1_SWMH3X_35791.jpg, 00:00:54, 6.81 m
Settled deposits, hard or compacted, 20% cross-sectional area loss

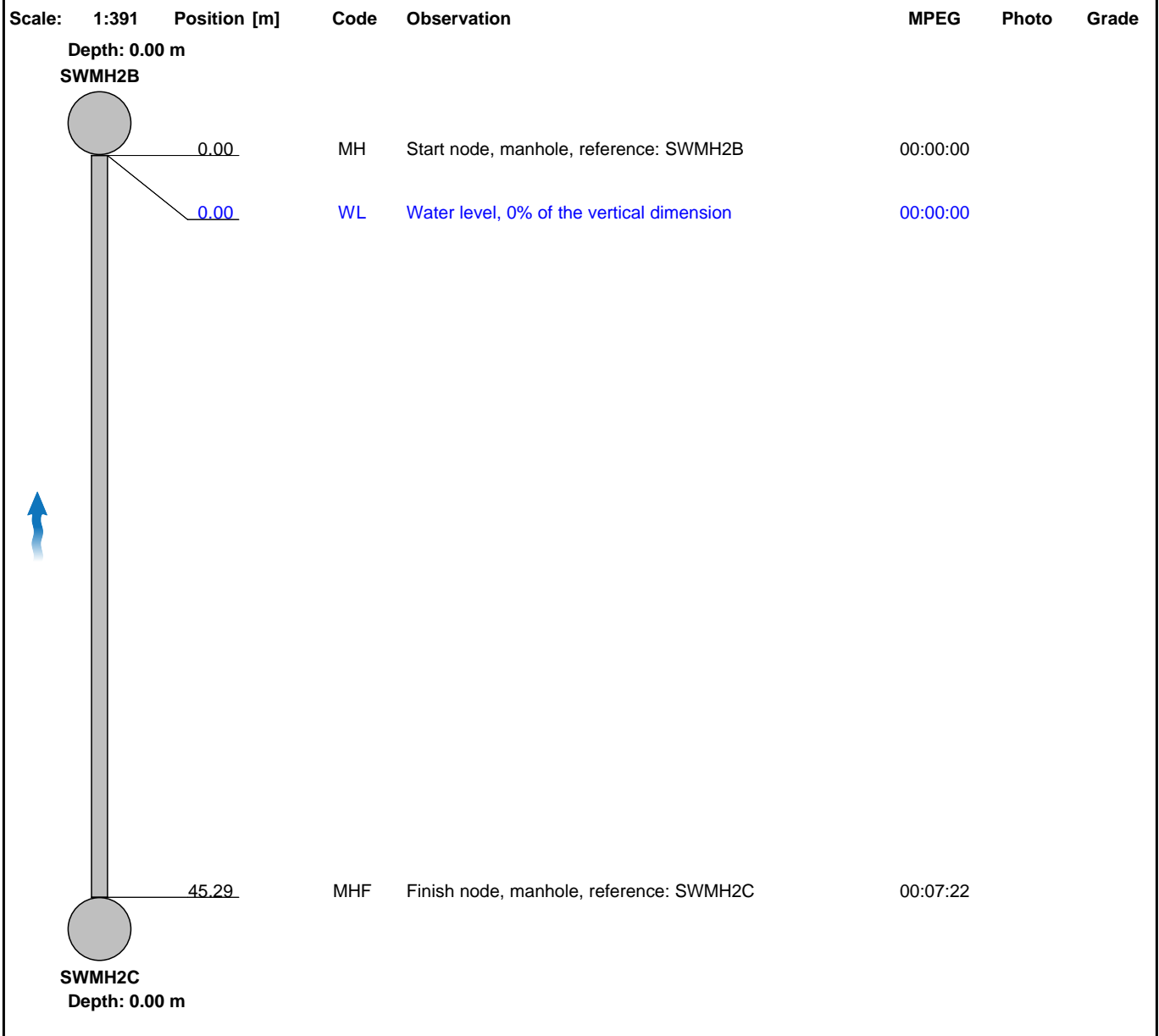


Section Inspection - 13/04/2022 - SWMH2CX

Item No. 11	Insp. No. 1	Date 13/04/22	Time 9:44	Client's Job Ref 789016	Weather No Rain Or Snow	Pre Cleaned No	PLR SWMH2CX
Operator SW		Vehicle PF69 YUV		Camera Large Crawler	Preset Length 0.70 m	Legal Status Highways Drainage	Alternative ID Not Specified

Town or Village:	Northium	Inspection Direction:	Upstream	Upstream Node:	SWMH2C
Road:	Goddens Gill	Inspected Length:	45.29 m	Upstream Pipe Depth:	0.000 m
Location:	Fields, farmland etc	Total Length:	45.29 m	Downstream Node:	SWMH2B
Surface Type:	Grass	Joint Length:	1.00 m	Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	450 mm		
Flow Control:	No flow control	Material:	Polyvinyl chloride		
Year Constructed:	1900	Lining Type:	No Lining		
Inspection Purpose:	Other purpose	Lining Material:	No Lining		

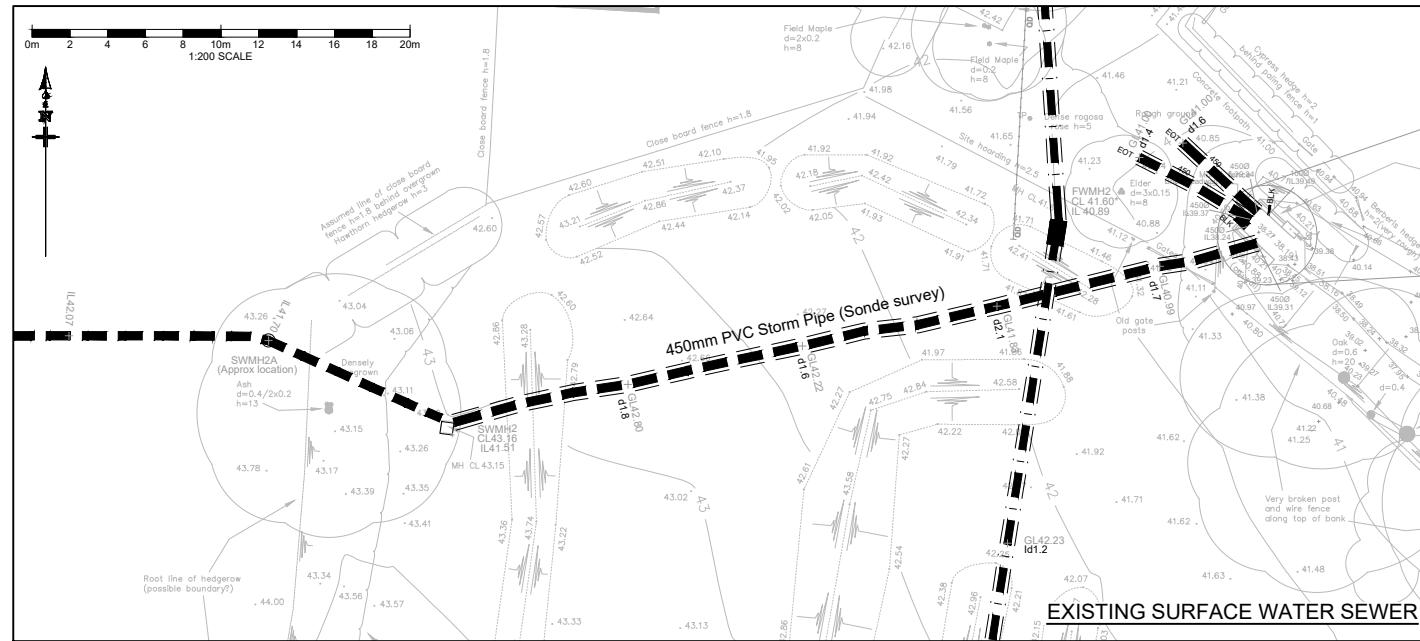
Comments: SURVEY COMPLETE
 Recommendations: None



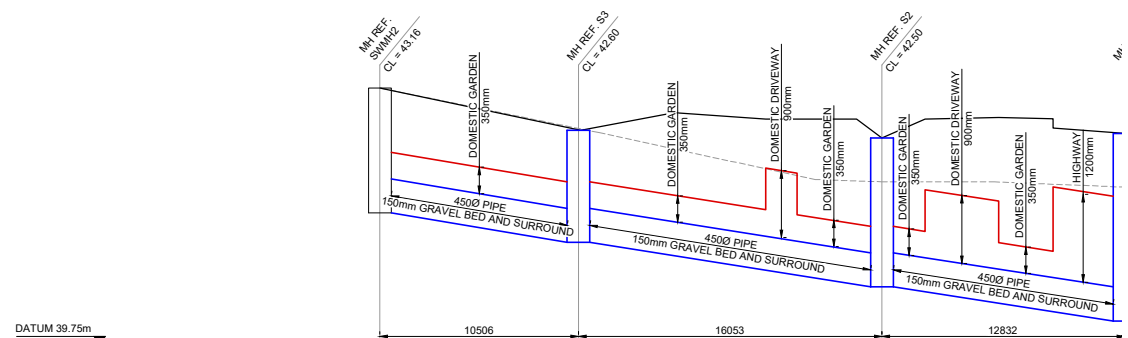
Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

AC22065-ABS-XX-XX-RP-C-5801

Appendix D – Existing and Proposed Layout, and Proposed Section



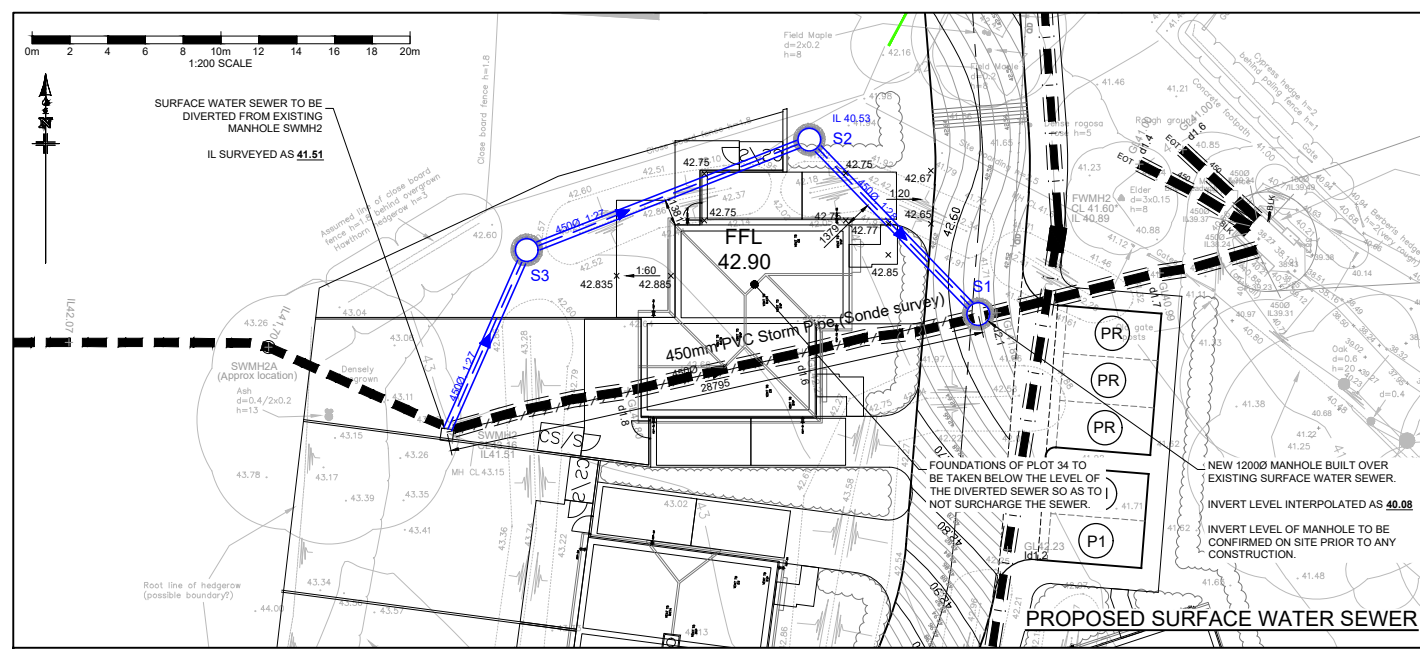
- ### NOTES
- DO NOT SCALE THIS DRAWING.
 - THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEER'S AND ARCHITECT'S DRAWINGS AND SPECIFICATIONS.
 - PUBLIC SEWER INFORMATION, AND STATUTORY SERVICE INFORMATION IF SHOWN IS BASED ON INFORMATION PROVIDED BY OR INTERPOLATED FROM PUBLIC SEWER AUTHORITY AND SERVICE PROVIDERS RECORDS. ALL INFORMATION RELATING TO SEWERS AND SERVICES TO BE VERIFIED ON SITE BY CONTRACTOR AND ENGINEER INFORMED IF INFORMATION DIFFERS FROM THAT SHOWN.
 - INVERT LEVELS OF EXISTING DRAINAGE AT PROPOSED OUTFALL TO BE VERIFIED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION OF ANY DRAINAGE AND FINDINGS REPORTED TO ENGINEER FOR REVIEW AND ACTION IF REQUIRED.
 - ALL WORK TO PUBLIC SEWER NETWORK, INCLUDING MATERIALS, CONNECTIONS TO EXISTING MANHOLES, NEW MANHOLES AND ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES TO BE FULLY IN ACCORDANCE WITH CURRENT EDITION OF SEWERS FOR ADOPTION AND SEWER UNDERTAKERS REQUIREMENTS UNLESS NOTED OTHERWISE.



CHAINAGE (m)	10506	16053	12832
EXISTING LEVELS (mAOD)	43.16	42.60	41.85
PROPOSED LEVELS (mAOD)	43.16	42.60	41.85
SW INVERT LEVELS (mAOD)	41.51	41.12	40.08

PARISH COUNCIL SEWER DIVERSION

EXISTING GROUND PROFILE ————
 PROPOSED GROUND PROFILE ————
 MINIMUM COVER ————



PRELIMINARY ISSUE

Mark	Date	By	Chkd	Revision notes
P01	17/06/22	MH	MRW	PRELIMINARY ISSUE.

abstract consulting
 Structural & Civil Engineers
 The Highland Suite, Great Hollenden Business Centre,
 Mill Lane, Underniver, Sevenoaks, Kent TN15 0SQ
 T: 01732 838050 E: info@abstract-consult.com www.abstract-consult.com

Job Title
THE PADDOCK, NORTHIAM.

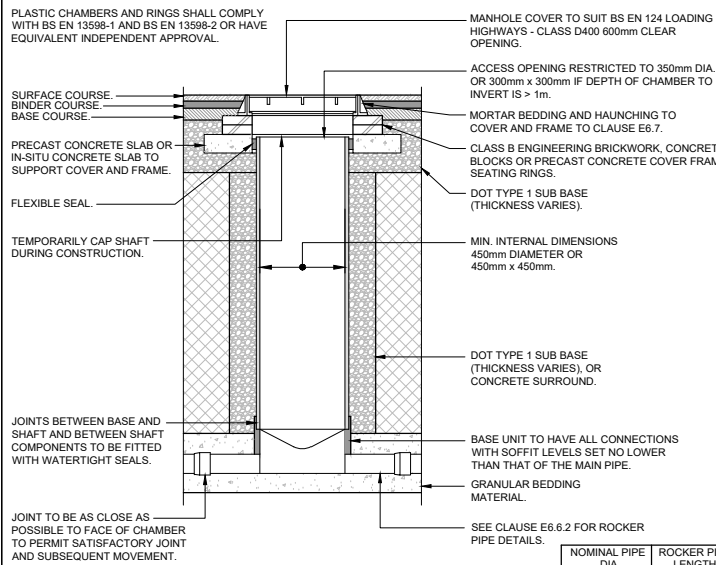
Drawing Title
PARISH COUNCIL SEWER DIVERSION, PLANS AND SECTION.

Client
GREYMOOR.

Abstract Job No AC22065	Drawn MH	Checked MRW
Scale @ A1 H: 1:200, V: 1:50	Date JUN'22	Date JUN'22
File Name AC22065-ABS-XX-XX-SE-C-5303	Revision P01	

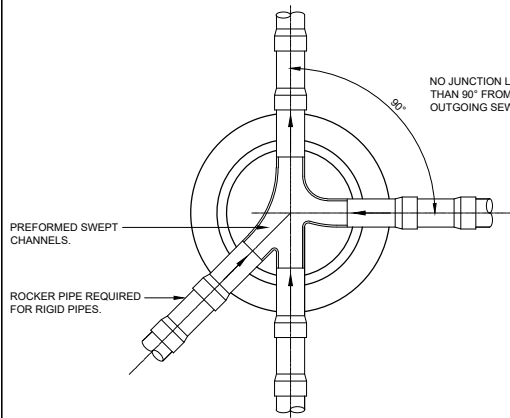
AC22065-ABS-XX-XX-RP-C-5801

Appendix E – Construction Details



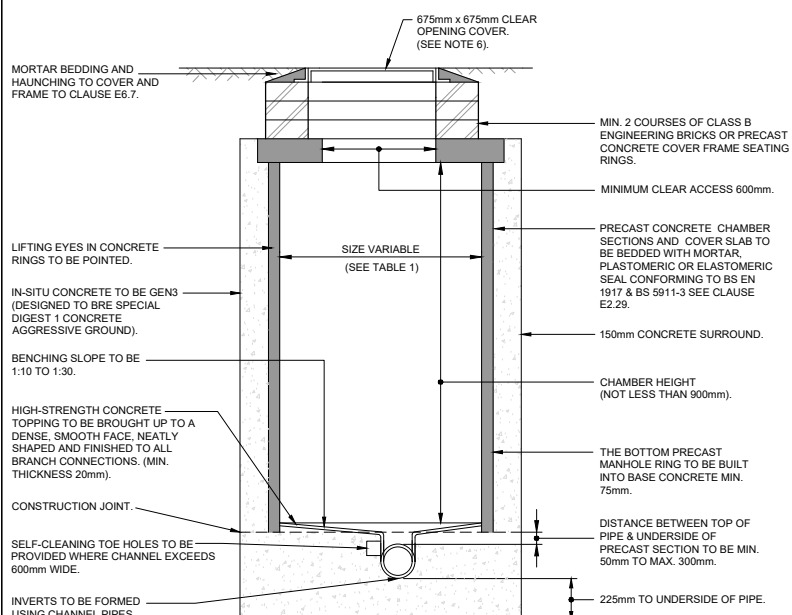
TYPICAL ACCESS CHAMBER DETAIL - TYPE 3 (FLEXIBLE MATERIAL DETAIL)
MAX. DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE IN AREAS SUBJECT TO VEHICLE LOADING 3m, NON ENTRY.

SCALE 1:20



TYPICAL ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES

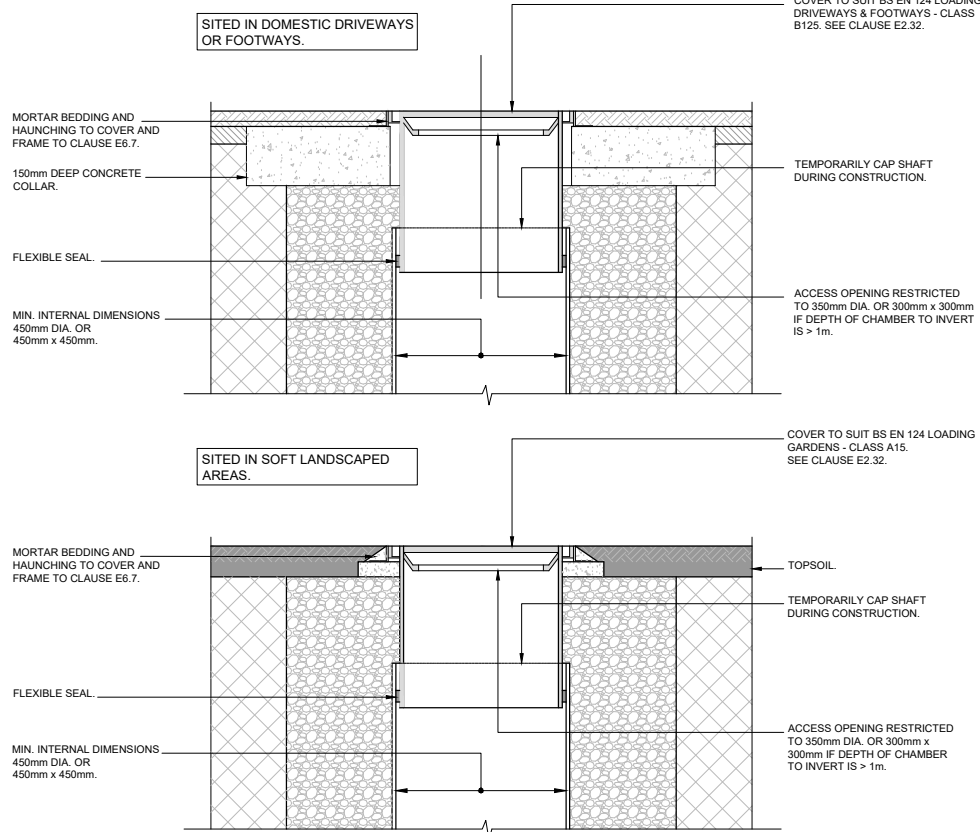
SCALE 1:20



SECTION

TYPICAL MANHOLE DETAIL - TYPE 2
MAX. DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE 3.0m

SCALE 1:20



ALTERNATIVE TOP DETAILS FOR LIGHT VEHICLE LOADING & LANDSCAPED AREAS - TYPE 3

PLASTIC CHAMBERS & RINGS SHALL COMPLY WITH BS EN 13598-1 & BS EN 13598-2 OR HAVE EQUIVALENT INDEPENDENT APPROVAL

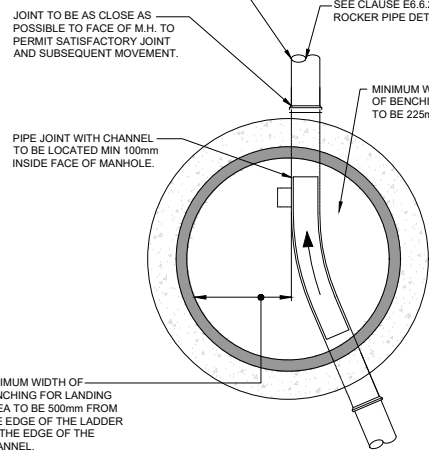
SCALE 1:10

RIGID PIPES BUILT INTO MANHOLE SHOULD HAVE A FLEXIBLE JOINT AS CLOSE AS FEASIBLE TO THE EXTERNAL FACE OF THE STRUCTURE AND THE LENGTH OF THE NEXT ROCKER PIPE SHOULD BE AS SHOWN

NOMINAL DIAMETER (mm)	MAXIMUM EFFECTIVE LENGTH (mm)
150 - 600	0.6
601 - 750	1.00
OVER 750	1.25

ALL PIPES ENTERING THE BOTTOM OF THE MANHOLE TO HAVE SOFFITS LEVEL.

NOMINAL PIPE DIA.	ROCKER PIPE LENGTH
150 - 600	0.6m
601 - 750	1.0m
OVER 750	1.25m



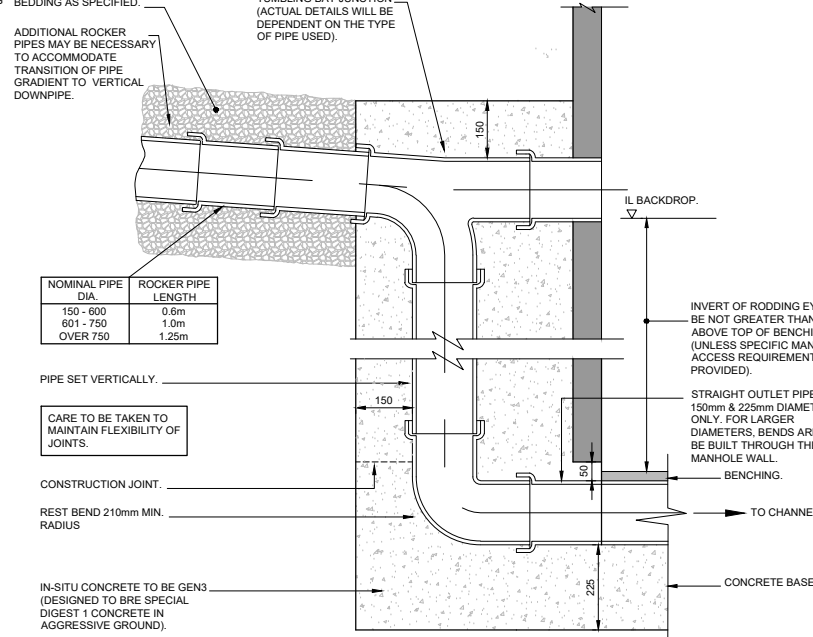
PLAN

TABLE 1

DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	MINIMUM INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375	1200
375 - 450	1350
500 - 700	1500
750 - 900	1800
GREATER THAN 900	PIPE DIAMETER + 900

TABLE 2

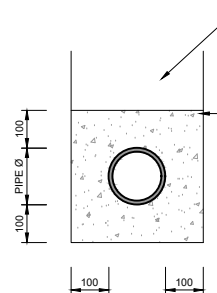
PROTECTION	MINIMUM COVER	LOCATION
150 GRANULAR BED AND SURROUND.	0.35m	DOMESTIC GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS.
	0.50m	DOMESTIC DRIVEWAYS, PARKING AREAS, AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES >7.5 TONNES.
	0.90m	DOMESTIC DRIVEWAYS, PARKING AREAS, AND NARROW STREETS WITHOUT FOOTWAYS WITH LIMITED ACCESS FOR VEHICLES >7.5 TONNES, AND AGRICULTURAL LAND AND PUBLIC OPEN SPACE.
	1.20m	OTHER HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLES >7.5 TONNES.
CONCRETE.		LESS THAN MINIMUM COVER AS SPECIFIED ABOVE.



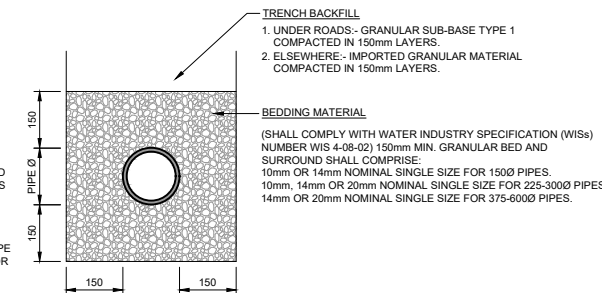
EXTERNAL VERTICAL BACKDROP

SCALE 1:10

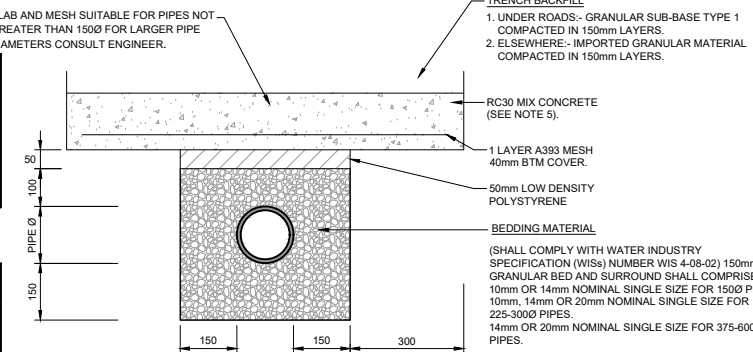
CONCRETE PROTECTION (RIGID PIPES)



GRANULAR SURROUND BED AND SURROUND DETAILS



CONCRETE PROTECTION (FLEXIBLE PIPES)



NOTES

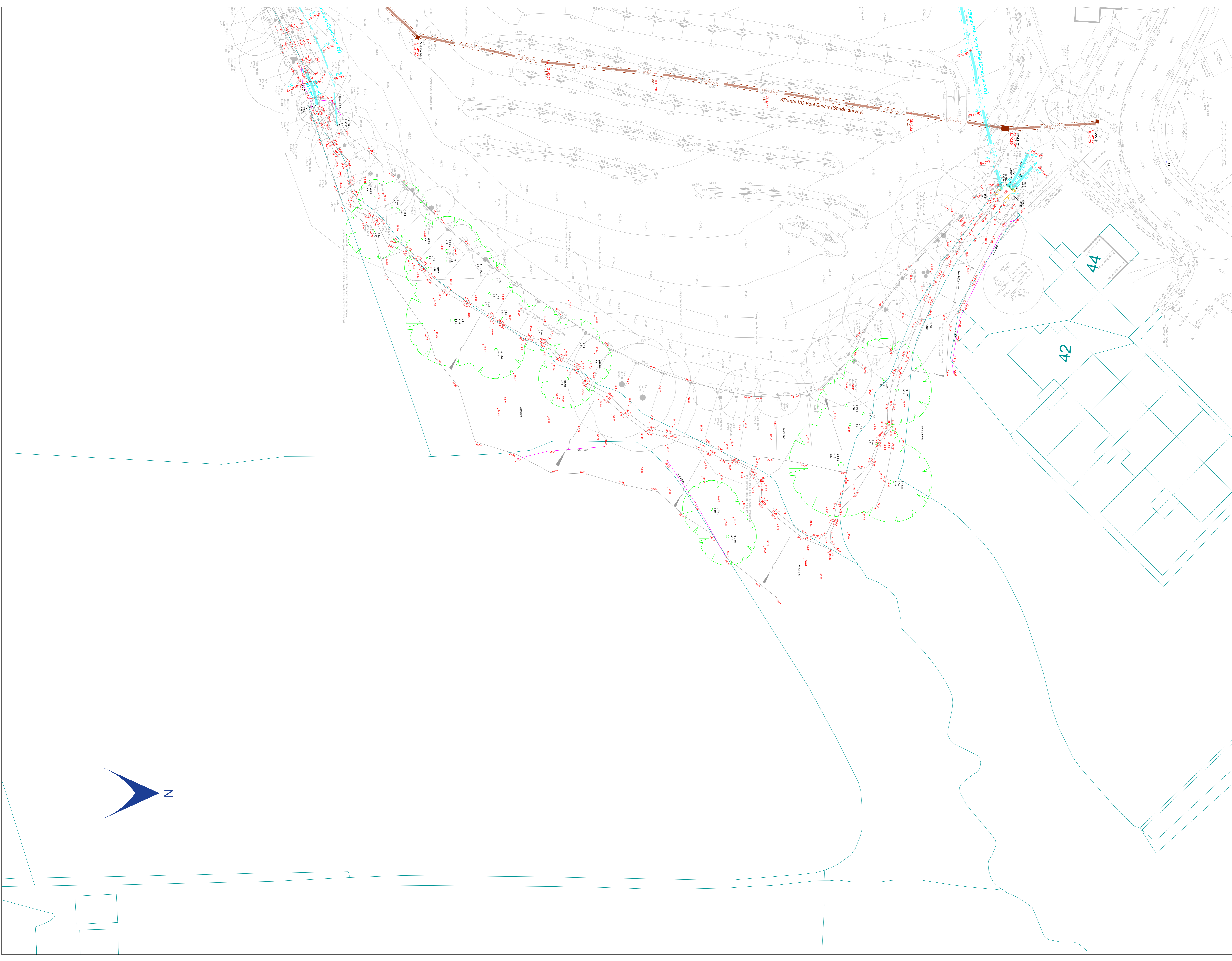
- DO NOT SCALE THIS DRAWING.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEER'S AND ARCHITECT'S DRAWINGS AND SPECIFICATIONS.
- DRAWINGS TO BE READ IN CONJUNCTION WITH SEWERS FOR ADOPTION 7TH EDITION.
- CHAMBERS WITH OUTGOING PIPES GREATER THAN 900mm DIAMETER SHALL BE FITTED WITH SAFETY CHAINS.
- PIPE BEDDING SHALL BE AS PER TABLE 2.
- ALL CONCRETE AND CEMENT MORTAR MUST BE SULPHATE RESISTING.
- MANHOLE TOPS SHALL COMPLY WITH BS EN 124, BS 7903, AND HA 104/09. BE THE NON VENTILATING TYPE WITH CLOSED KEYWAYS. EMBOSSED FW AND SW FOR FOUL WATER AND SURFACE WATER SEWERS RESPECTIVELY, AND SHALL BE:
 - A NON-ROCKING DESIGN WHICH DOES NOT RELY ON THE USE OF CUSHION INSERTS.
 - CLASS D400 IN CARRIAGEWAYS (INCLUDING PEDESTRIAN STREETS), HARD SHOULDERS AND PARKING AREAS. MINIMUM FRAME DEPTH SHALL BE 150mm IN ALL CLASSES OF ROAD CATEGORY EXCEPT RESIDENTIAL CUL-DE-SACS WHERE BLOCK PAVING IS NOT USED. MINIMUM DEPTH SHALL BE 100mm.
 - CLASS B125 IN FOOTWAYS AND PEDESTRIAN AREAS.
 - CLASS A15 IN SOFT LANDSCAPED AREAS.
- MANHOLE TOPS SHALL BE BEDDED ON CEMENT MORTAR EXCEPT FOR NRSWA ROAD CATEGORIES I, II, OR III, (TRUNK ROADS AND DUAL CARRIAGEWAYS, ALL OTHER A ROADS & BUS SERVICE ROUTES) WHERE BEDDING SHALL BE POLYESTER RESIN BEDDING MORTAR.
- COVER LEVELS TO BE ADJUSTED LOCALLY TO SUIT FINISHED EXISTING LEVELS AND SURFACE PROFILE.
- LEVELS TO EXISTING CHAMBERS AND SEWERS TO BE VERIFIED ON SITE PRIOR TO DRAINAGE WORKS COMMENCING.
- PIPES AT MANHOLES TO BE SOFFIT TO SOFFIT UNLESS OTHERWISE STATED.
- GRAVITY PIPEWORK SHALL BE:
 - VITRIFIED CLAY TO CL E2.18.
 - CONCRETE TO CL E2.19.
 - DUCTILE IRON TO CL E2.20.
 - POLYETHYLENE STRUCTURED WALL TO CL E2.22 UP TO 900mm Ø SUBJECT TO DEMONSTRATION OF JETTING RESISTANCE OF 4000 PSI (280 BAR) WITHOUT DAMAGE TO SECTION 6.10 OF WATER INDUSTRY SPECIFICATION 4-35-01 AND SATISFYING ALL OTHER PROVISIONS OF THAT SPECIFICATION.
- ALL MORTAR SHALL BE 3:1 SAND:CEMENT UNLESS STATED OTHERWISE.
- ALL CONCRETE SHALL BE IN ACCORDANCE WITH BS 5328:1991.
- WHEN THE PROPOSED CHAMBERS ARE TO BE LOCATED IN PUBLIC HIGHWAY ALL CHAMBERS OVER 15000 TO BE BY STANTON & BONNA CONCRETE PRODUCTS LTD. TEL: 0115-944-1448.

PRELIMINARY ISSUE

P01	29/04/22	MRW	MRW	PRELIMINARY ISSUE.
T01	11/04/22	AJ	MRW	PRELIMINARY ISSUE.
Mark	Date	By	Chkd	Revision notes
abstract consulting Structural & Civil Engineers The Highland Suite, Great Hollands Business Centre, Mill Lane, Undernier, Sevenoaks, Kent TN15 0SQ T: 01732 838050 E: info@abstract-consult.com www.abstract-consult.com				
Job Title THE PADDOCK, NORTHAM.				
Drawing Title ADOPTABLE DRAINAGE CONSTRUCTION DETAILS.				
Client GREYMOOR.				
Abstract Job No	AC22065	Drawn	AJ	Checked
Scale @ A1	AS SHOWN	Date	APR '22	Date
File Name	AC22065-ABS-XX-XX-DR-C-5203	Revision	P01	

APPENDIX B

Drainage Survey Drawings



ASSET ABBREVIATIONS

AB	Abandoned	G	Gully
ACD	Assumed Connection	GL	Ground Level
BD	Backdrop	IC	Inspection Chamber
BL	Backlog	IL	Invert Level
BK	Backlog Level	IS	Invert Depth
BR	Branch	NVO	No Visible Outlet
CC	Cast Iron	PE	Polyethylene
CI	Concrete Chamber	PVC	Polyvinyl Chloride
CL	Cover Level	RI	From records
d	depth of service	SI	Sump Depth
DI	Ductile Iron	ST	Steel
DIS	Disused	UNK	Unknown
DP	Down Pipe	UTL	Unable to Lift
DC	Drainage Channel	UTD	Unable to Open
DT	Disconnecting Trap	UTS	Unable to Survey
EQS	End of Pipe Face	VC	Verified Clay
EOT	End of Trace	WL	Water Level
FLD	Flooded	WW	Water valve
FOS	Full of Silt		

ASSET LEGEND

FOUL WATER	COMBINED
SURFACE WATER	UNKNOWN
PIPE OBSTRUCTION	SPE
WATER	FIRE MAIN
WATER RECORD MARK	

PAS 128 QUALITY LEVELS

QC-D Asset added from records
 QC-C Asset added from site reconnaissance
 QC-B Asset added to assumed depth
 QC-A Asset located horizontally by one technique only
 QC-EP Same as QC-A including GPR data processing
 QC-3D Asset located horizontally and vertically by one technique only
 QC-3V Asset located horizontally and vertically by one technique only
 QC-3M Asset located horizontally and vertically by multiple techniques
 QC-A Asset located by physical verification

Where details are recorded at inspection covers such as depths, pipe sizes, number of joints etc. these are classified as QC-A.

UNDERGROUND SERVICES SURVEY CAVEATS

The user or recipient of the survey data understands and acknowledges that the data provided may contain errors or omissions and the user or recipient assumes full responsibility for any risks or damages resulting from, arising from or in connection with any use of the captured information.

Multiple methods of detection have been used in the location and identification of underground assets. The results are not infallible due to several factors outside of Plowman Craven's control. With any uncertainty in the provided data we strongly recommend trial excavations to be carried out to confirm exact position and depth. All reasonable effort has been made in searching available records drawings but the completeness of the underground asset drawings cannot be guaranteed. Damage designation is made on site from the surface via visual inspection.

LINE & LEVEL SURVEY CAVEATS

CCTV sonde tracing:
 Sewer routes may have been used in the location of the sewers. The results are not infallible and should be viewed in the light of a normally expected trial excavation accuracy of +/- 10% of the depth of the traced route.

Cross-section survey
 Where possible a survey system incorporating a grapple has been used to determine the alignment of the sewers. The expected accuracy of this data is +/- 5%.

LEGEND

12.00" Level taken from Clients Topo

NOTES

The geospatial framework is existing topographic survey data provided to the client as a digital drawing file 2007-The Paddock, Northam-Topographic Survey.dwg. All Plowman Craven data has been referenced to the grid contained within the drawing file.

The geospatial framework is existing Ordnance Survey data provided to the client as part of the digital drawing file 2007-The Paddock, Northam-Topographic Survey.dwg.

The following (RED) text is taken from the border information of the digital drawing file 2007-The Paddock, Northam-Topographic Survey.dwg:

Point A has particular importance. It should be taken into account when this drawing is used for any future work.

DISCLAIMERS:

1. Survey work on this site was originally carried out in 2003, and this survey has been updated to reflect the most recent available data.
2. Where the survey was field checked in 2015, it was found that a small number had been identified as incorrect. It is noted that the original data is shown in red in the drawing file.
3. The geospatial framework is existing Ordnance Survey data provided to the client as part of the digital drawing file 2007-The Paddock, Northam-Topographic Survey.dwg. All Plowman Craven data has been referenced to the grid contained within the drawing file.
4. A further disclaimer is that the data is not to be used for any other purpose than that for which it was originally intended.

Due to the inherent instability of paper materials, drawings plotted on paper may be stretched and distorted - dimensions scaled from paper plots should therefore be treated with caution.

This drawing has been produced for the purpose of the original commissioning agent Plowman Craven and is not to be used for any other purpose. Plowman Craven Limited will accept no responsibility for details that are subsequently found to be the responsibility of other parties or for any errors or omissions that have occurred since the date of issue.

ISSUES & REVISIONS

Issue	Details	By	Date
April 1	Provisional Issue	JD	01/03/2022
A	Final Issue	JD	29/04/2022

This survey is commensurate with band F accuracy, as outlined in the RICS survey detail accuracy banding table.

All levels are in metres and are above Ordnance Survey Newlyn Datum derived by multiple network RTK GPS observations.

The survey grid shown on this drawing is the Ordnance Survey (OS) National Grid. The grid was established by multiple network RTK GPS observations. The topographic detail is referenced to the grid at coordinates 533645E, 175200N. The scale factor for this detail is 1. Unless otherwise stated, levels have been taken to finished surface.

All quoted dimensions are in metres.

Drawing units are metres.

SHEET LAYOUT

CLIENT
Greymoor
 Unit M Great Hollands Business Centre
 Mill Lane
 Hildenborough
 Kent TN15 0SG

PROJECT TITLE
The Paddock Northam

Drainage Survey

PRESENTATION SCALE 1:200 @ A0

DATE OF ORIGINAL SURVEY February 2022

PC PROJECT No. 47001 **CHECKED** JD

DRAWING No. **ISSUE**

47001U-01-1 **A**

Plowman Craven
 Plowman Craven House
 2 Leas Business Park
 Lower Luton Road
 Harpenden
 Hertfordshire
 AL5 5EQ
 Tel: +44 (0)1542 765566
 Email: post@plowmancraven.co.uk
 Web: www.plowmancraven.co.uk

115 Southwark Bridge Road
 London
 SE1 0AX
 Tel: +44 (0)207 450 7700



ASSET ABBREVIATIONS

AB	Abandoned	G	Gully
ACS	Assumed Connection	GL	Ground Level
BD	Backdrop	IC	Inspection Chamber
BLK	Backlog Level	IL	Invert depth
BLK	Blocked	IL	Invert Level
BR	Branch	NVO	No Visible Outlet
CC	Capped	PE	Polyethylene
CC	Concrete Chamber	PVC	Polyvinyl Chloride
CI	Cast Iron	RI	From records
CL	Cover Level	SD	Spring Depth
d	depth of service	SI	Soun Iron
DI	Ductile Iron	ST	Steel
DIS	Disused	UNK	Unknown
DP	Down Pipe	URL	Unable to Lift
DIC	Drainage Channel	UTD	Unable to Open
DT	Disconnecting Trap	UTS	Unable to Survey
EC	End of Pipe Trace	VC	Victrolid Clay
EOT	End of Trace	WL	Water Level
FLD	Flooded	WW	Water valve
FOS	Full of Silt		

ASSET LEGEND

FOUL WATER	COMBINED
SURFACE WATER	UNKNOWN
PIPE DIRECTION	OPEN
WATER	PIPE MAN
WATER RECORD MARK	

PAS 128 QUALITY LEVELS

QL: 0 Asset added from records
 QL: 1 Asset added from site reconnaissance
 QL: 2 Asset shown as assumed position
 QL: 3 Asset located horizontally by one technique only
 QL: 4 Asset located horizontally and vertically by one technique only
 QL: 5 Asset located horizontally and vertically by multiple techniques
 QL: 6 Asset located by physical verification

UNDERGROUND SERVICES SURVEY CAVEATS

The user or recipient of the survey data understands and acknowledges that the data provided may contain errors or omissions and the user or recipient assumes full responsibility for any risks or damages resulting from, arising from or in connection with any use of the captured information.

Multiple methods of detection have been used in the location and identification of underground assets. The results are not infallible due to several factors outside of Plowman Craven's control. With any uncertainty in the provided data, it is strongly recommended that excavations to be carried out to confirm exact position and depth. All reasonable effort has been made in searching available records drawings but the completeness of the underground asset drawings cannot be guaranteed. Damage designation is made on site from the surface via visual inspection.

LINE & LEVEL SURVEY CAVEATS

CCTV under tracing:
 Sewer routes may have been used in the location of the sewers. The results are not infallible and should be viewed in the light of a normally expected that the operators accuracy is +/- 10% the depth of the traced sewer.

Scoposcopic survey:
 Where possible a survey system incorporating a gyroscope has been used to determine the alignment of the sewers. The expected accuracy of this data is +/- 5.0%.

LEGEND

—	Sewer Tracing tolerance zone
12.00'	Level taken from Clients Topo

NOTES

The private network is existing topographic survey data provided to the client as digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg. All Plowman Craven data has been referenced to the grid contained within the drawing file.

The private network is existing Ordnance Survey data provided to the client as part of the digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg.

The following (RED) text is taken from the border information of the digital drawing file 2967-The Paddock, Northam-Topographic Survey.dwg:

Point A of particular importance. It should be taken into account when the drawing is used for any future work.

- ISSUES/REVISIONS:**
1. Survey work on this site was originally carried out in 2003, and this survey has been a revision of the original survey.
 2. When the survey was first carried out in 2003, it was found that a sewer line had been discovered but it was not shown on the original drawings.
 3. The original drawings were based on a survey carried out in 2003. The original drawings were based on a survey carried out in 2003. The original drawings were based on a survey carried out in 2003.
 4. A 3D modelling program has been used to create a 3D model of the sewer network.

Due to the inherent instability of paper materials, drawings plotted on paper may be stretched and distorted - dimensions scaled from paper plots should therefore be treated with caution.

This drawing has been prepared for the purpose of the original commissioning agent, Plowman Craven. Plowman Craven Limited will accept no responsibility for results that are subsequently found to be the consequence of misinterpretation of the data obtained from one of the data sources that have been shown on this drawing.

ISSUES & REVISIONS

Issue	Details	By	Date
April 1	Provisional Issue	JD	01/03/2022
A	Final Issue	JD	29/04/2022

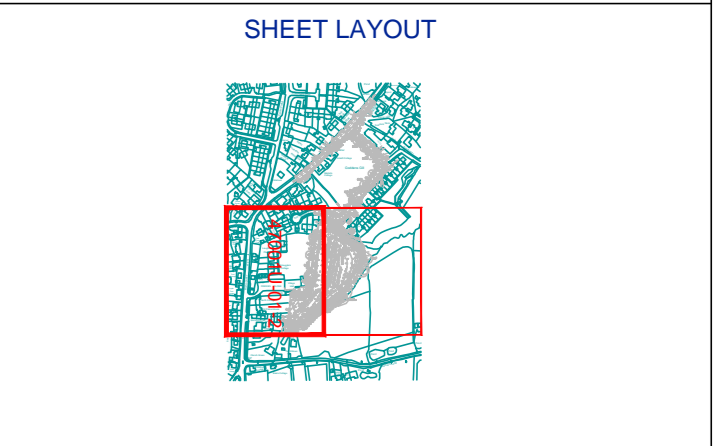
This survey is commensurate with band F accuracy, as outlined in the RICS survey detail accuracy banding table.

All levels are in metres and are above Ordnance Survey Newlyn Datum derived by multiple network RTK GPS observations.

The survey grid shown on this drawing is the Ordnance Survey (OS) National Grid. The grid was established by multiple network RTK GPS observations. The geographic detail is referenced to the grid at coordinates 535654E, 175200N. The scale factor for this detail is 1. Unless otherwise stated, levels have been taken to finished surface.

All quoted dimensions are in metres.

Drawing units are metres.



CLIENT
 Greymoor
 Unit M Great Hollands Business Centre
 Mill Lane
 Hildenborough
 Kent TN15 0SG

PROJECT TITLE
 The Paddock Northam

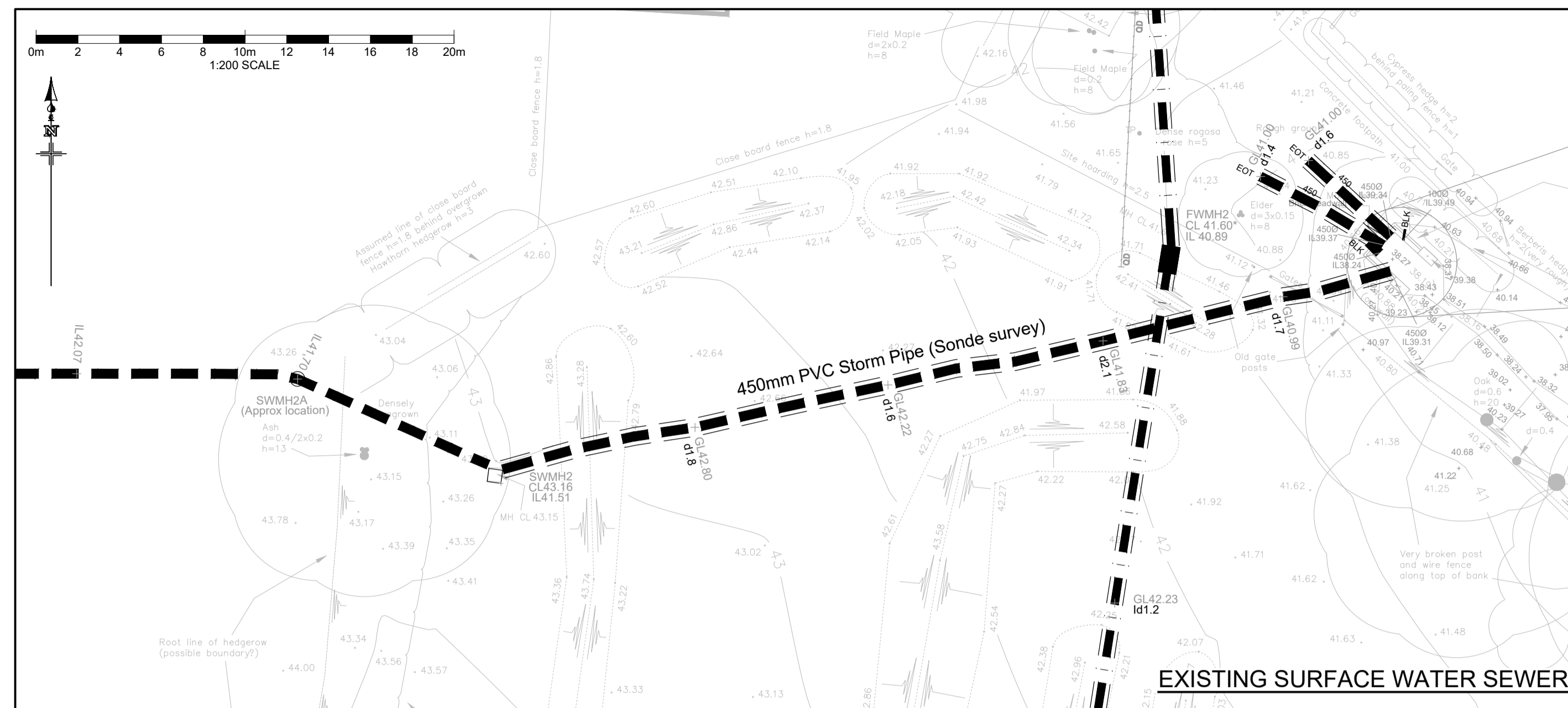
Drainage Survey
PRESENTATION SCALE 1:200 @ A0
DATE OF ORIGINAL SURVEY February 2022
PC PROJECT No. 47001 **CHECKED** JD
DRAWING No. **ISSUE**
 47001U-01-2 **A**

Plowman Craven

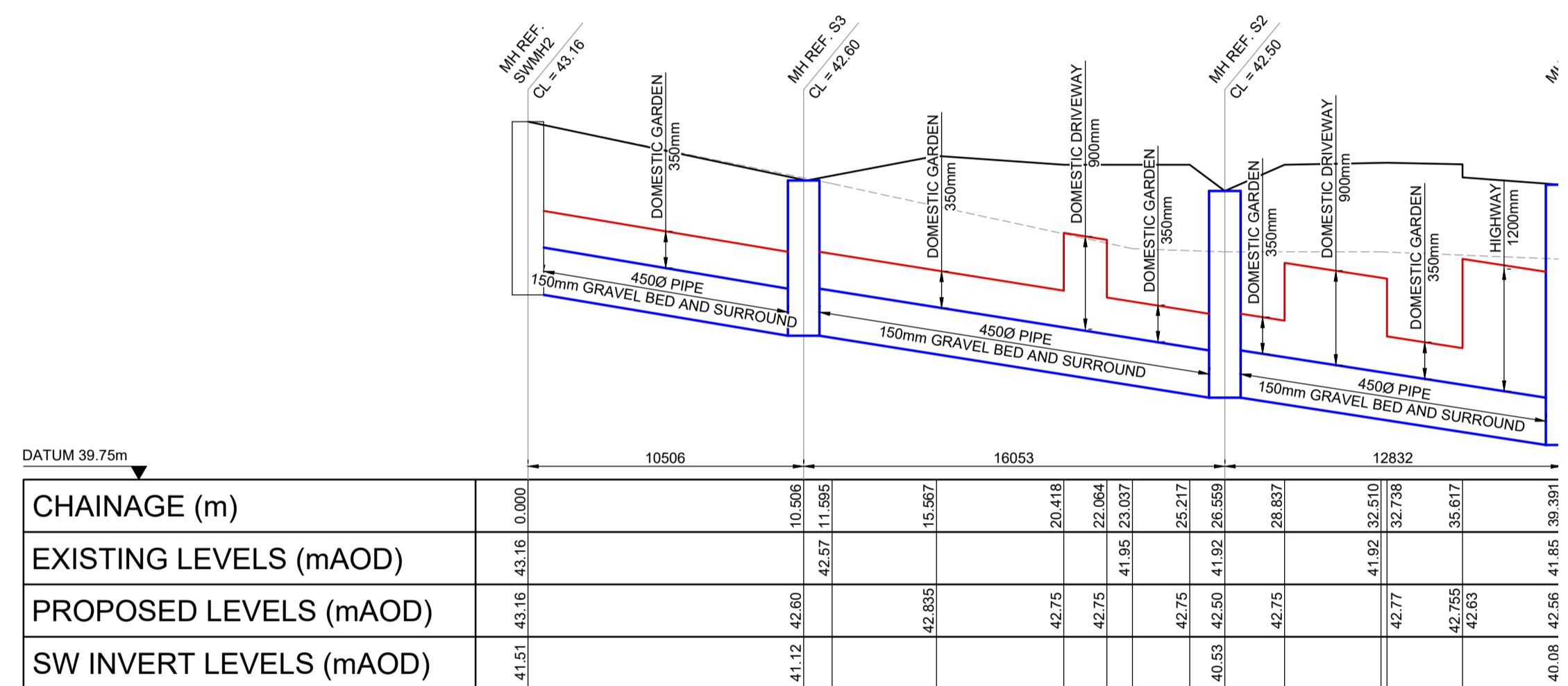
Plowman Craven House 115 Southwark Bridge Road
 2 Lee Business Park London SE1 0AX
 Lower Luton Road Harpenden Hertfordshire
 AL5 5EQ
 Tel: +44 (0)1542 765556 Tel: +44 (0)207 450 7700
 Email: post@plowmancraven.co.uk
 Web: www.plowmancraven.co.uk

APPENDIX C

'Parish Council Sewer Diversion, Plan and Section' Drawing

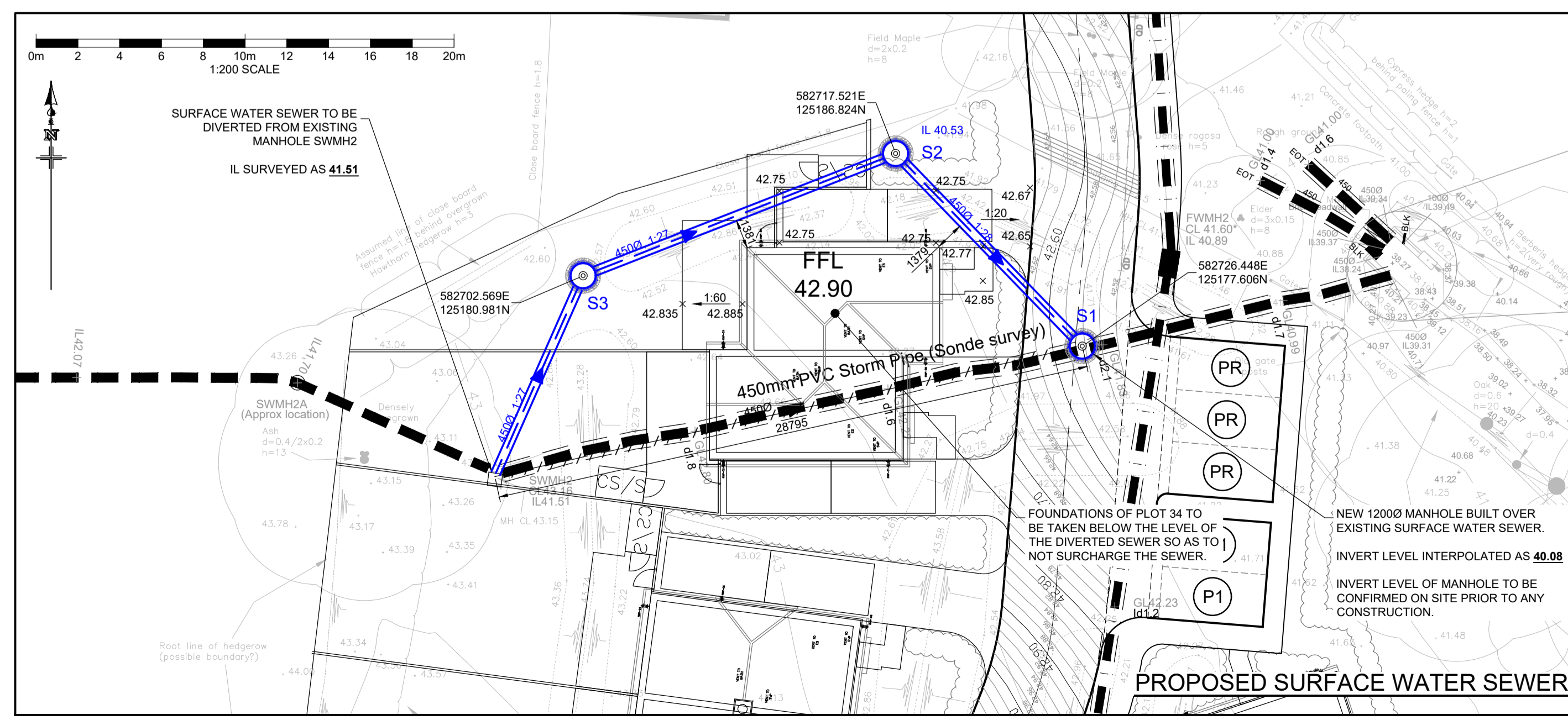


- ### NOTES
- DO NOT SCALE THIS DRAWING.
 - THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS AND SPECIFICATIONS.
 - PUBLIC SEWER INFORMATION, AND STATUTORY SERVICE INFORMATION IF SHOWN IS BASED ON INFORMATION PROVIDED BY OR INTERPOLATED FROM PUBLIC SEWER AUTHORITY AND SERVICE PROVIDERS RECORDS. ALL INFORMATION RELATING TO SEWERS AND SERVICES TO BE VERIFIED ON SITE BY CONTRACTOR AND ENGINEER INFORMED IF INFORMATION DIFFERS FROM THAT SHOWN.
 - INVERT LEVELS OF EXISTING DRAINAGE AT PROPOSED OUTFALL TO BE VERIFIED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION OF ANY DRAINAGE AND FINDINGS REPORTED TO ENGINEER FOR REVIEW AND ACTION IF REQUIRED.
 - ALL WORK TO PUBLIC SEWER NETWORK, INCLUDING MATERIALS, CONNECTIONS TO EXISTING MANHOLES, NEW MANHOLES AND ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES TO BE FULLY IN ACCORDANCE WITH CURRENT EDITION OF SEWERS FOR ADOPTION AND SEWER UNDERTAKERS REQUIREMENTS UNLESS NOTED OTHERWISE.



PARISH COUNCIL SEWER DIVERSION

EXISTING GROUND PROFILE ————
 PROPOSED GROUND PROFILE ————
 MINIMUM COVER ————



CONSTRUCTION ISSUE

C01	19/07/22	AJ	MRW	CONSTRUCTION ISSUE.
P02	20/06/22	MH	MRW	SETTING OUT COORDS ADDED.
P01	17/06/22	MH	MRW	PRELIMINARY ISSUE.
Mark	Date	By	Chkd	Revision notes

abstract
 consulting
 Structural & Civil Engineers
 The Highland Suite, Great Hollenden Business Centre,
 Mill Lane, Underiver, Sevenoaks, Kent TN15 0SQ
 T: 01732 838050 E: info@abstract-consult.com www.abstract-consult.com

Job Title
THE PADDOCK, NORTHIAM.

Drawing Title
PARISH COUNCIL SEWER DIVERSION, PLANS AND SECTION.

Client
GREYMOOR.

Abstract Job No AC22065	Drawn MH	Checked MRW
Scale @ A1 H: 1:200, V: 1:50	Date JUN'22	Date JUN'22
File Name AC22065-ABS-XX-XX-SE-C-5303	Revision	C01