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JANUARY 2021

**DISCHARGE OF DRAINAGE
CONDITIONS
FOR
PROPOSED DEVELOPMENT
AT
FORMER SOVEREIGN HOUSE
KETTLESTRING LANE
YORK**

PROJECT REF:

CMH/BI/JKW/43267-TEN005

REVISION A



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**DISCHARGE OF DRAINAGE CONDITIONS FOR PROPOSED
DEVELOPMENT AT FORMER SOVEREIGN HOUSE, KETTLESTRING LANE,
YORK**

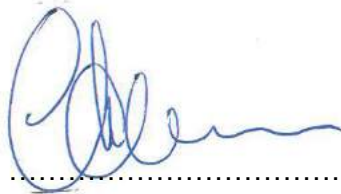
Prepared by: **Ben Ions** MEng (Hons) CEng MICE



Signed:

Date: 12th January 2021

Approved by: **Chris Hudson** BEng LLB Dip Law CEng MICE MCI Arb
Director



Signed:

Date: 12th January 2021

Issue	Revision	Revised by	Approved by	Revised Date
Rev A	Minor client comments	BI	CH	14.01.21

For the avoidance of doubt, the parties confirm that these conditions of engagement shall not and the parties do not intend that these conditions of engagement shall confer on any party any rights to enforce any term of this Agreement pursuant of the Contracts (Rights of third Parties) Act 1999.

The Appointment of Alan Wood & Partners shall be governed by and construed in all respects in accordance with the laws of England & Wales and each party submits to the exclusive jurisdiction of the Courts of England & Wales.

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1.0 INTRODUCTION

- 1.1. Alan Wood & Partners were commissioned by IPIF York Unit Trust c/o George Cornwall Leigh to carry out the drainage design for a proposed development at Former Sovereign House, Kettlestring Lane, York, YO30 4GQ.
- 1.2. The proposed site occupies land to the north of Kettlestring Lane which was previously developed with 3 No. 2 storey brick built office buildings and substantially tarmacked hard standings for communal parking, as shown in figures 1.1 to 1.3 below. However, the buildings have subsequently been demolished. The site has a total development area of 0.41 hectares, approximately 0.27 hectares of which is impermeable.



Figure 1.1: Previous Buildings Now Demolished



Figure 1.2: Previous Buildings Now Demolished



Figure 1.3: Previous Buildings Now Demolished

- 1.3. The proposed development consists of the erection of a B1(c) or B2 or B8 or Trade Counter Use Unit and associated car parking and landscaping.
- 1.4. The purpose of this Technical Note is to provide commentary on the proposed drainage system as part of the application to discharge the planning conditions relating to the drainage.
- 1.5. The proposed site obtained planning consent with City of York Council on 07.08.20, planning reference 20/00146/FULM.
- 1.6. The planning conditions which are to be discharged as part of the application are as follows:

Condition No. 18

Prior to commencement of the development details of foul and surface water drainage, including balancing/attenuation, shall be submitted to the Local Planning Authority for approval in writing, and thereafter implemented in accordance with the approved details.

Condition No. 19

Unless otherwise approved in writing by the local planning authority, there shall be no piped discharge of surface water from the development prior to completion of the approved surface water drainage works and no building shall be occupied or brought into use prior to completion of the approved foul drainage works.

2.0 **EXISTING SITE DESCRIPTION**

2.1 **Site Location**

- 2.1.1 The site is located at Former Sovereign House, Kettlestring Lane, York, YO30 4GQ.
- 2.1.2 The overall area of the development site is approximately 0.41 hectares.
- 2.1.3 The development site is located on an existing site owned by the Client, IPIF York Unit Trust c/o George Cornwall Leigh.
- 2.1.4 An aerial photograph is included in Figure 2.1 below which identifies the location of the development.
- 2.1.5 The Ordnance Survey grid reference for the centre of the development site is approximately SE 59306 55204 (Grid Reference (6 Figure) SE593552).
- 2.1.6 The existing buildings within the site boundary have been subsequently been demolished.
- 2.1.7 A topographic and utility survey has been carried out following the demolition, which can be found in Appendix A.
- 2.1.8 The site survey, as referred in Section 2.1.7, identifies a number of private manholes and sewers on the site which connect into the separate surface water and foul water Yorkshire Water public sewers to the southern boundary.
- 2.1.9 A CCTV drainage survey has been carried which confirms there is a positive connection from the site into the surface water and foul water Yorkshire Water public sewers. The CCTV survey can be found in Appendix H.
- 2.1.10 Therefore the CCTV and the site survey provide clear evidence that the former buildings discharged the surface water and the foul water into the Yorkshire Water public sewers.



Figure 2.1: Aerial Photograph

2.2 Surrounding Features

- 2.2.1 The development site is located within the Clifton Moor Industrial Estate. The estate is occupied by various businesses including garages, car dealerships, gyms, showrooms and offices.
- 2.2.2 The development site is located approximately 2.05km east of the River Ouse, 1.75km west of the River Foss and approximately 0.50km north west of an existing pond and Bur Dike which are located to the south of Clifton Moor Gate.
- 2.2.3 The proposed development will utilise existing access to the adjacent highway, Kettlestring Lane.

2.3 Topography

- 2.3.1 A topographical survey of the site has been carried out. The site has an average level of approximately 14.90mAOD and is generally flat with a slight downward slope towards the south east corner of the site. The survey drawing is included in Appendix A.

2.3.2 Existing ground levels across the site were found to vary from approximately 14.70mAOD up to approximately 15.09mAOD.

2.4 Ground Conditions

2.4.1 A desktop study of the British Geological Survey (BGS) map of the area reveals that the local geology comprises of superficial deposits of Alne Glaciolacustrine Formation (Clay, Silty) overlaying Sherwood Sandstone Group (Sandstone).

2.4.2 Figures 2.3 and 2.3 show an extract from the local BGS map and the approximately site locations within the Alne Glaciolacustrine Formation area. The whole of Clifton Moor Industrial Estate is located within this geology.

2.4.3 Historic bore hole records in the area show up to approx. 0.55 m of topsoil (but usually less with a more typical range closer to 0.20-0.30m) overlaying sandy and silty clays.

2.4.4 All boreholes reviewed are located within the Lacustrine Clay Formation. Typical borehole records from the local area have been included in Appendix B.

2.4.5 The borehole records that were reviewed all indicate the same superficial geology. Therefore, it is reasonable to assume that the ground conditions will be similar at the area of the development site.

2.4.6 An intrusive ground investigation has been undertaken on the development site. The results from the ground investigation have been included in Appendix C and reflect the historic borehole data. The natural strata across the site comprises silty and sandy clays.

2.4.7 The historic borehole data, BGS records and data from the intrusive ground investigation all indicate a downward succession of topsoil with strata of limited infiltration potential, the site is not considered suitable for the disposal of surface water run-off from the development via infiltration.

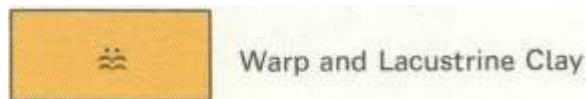
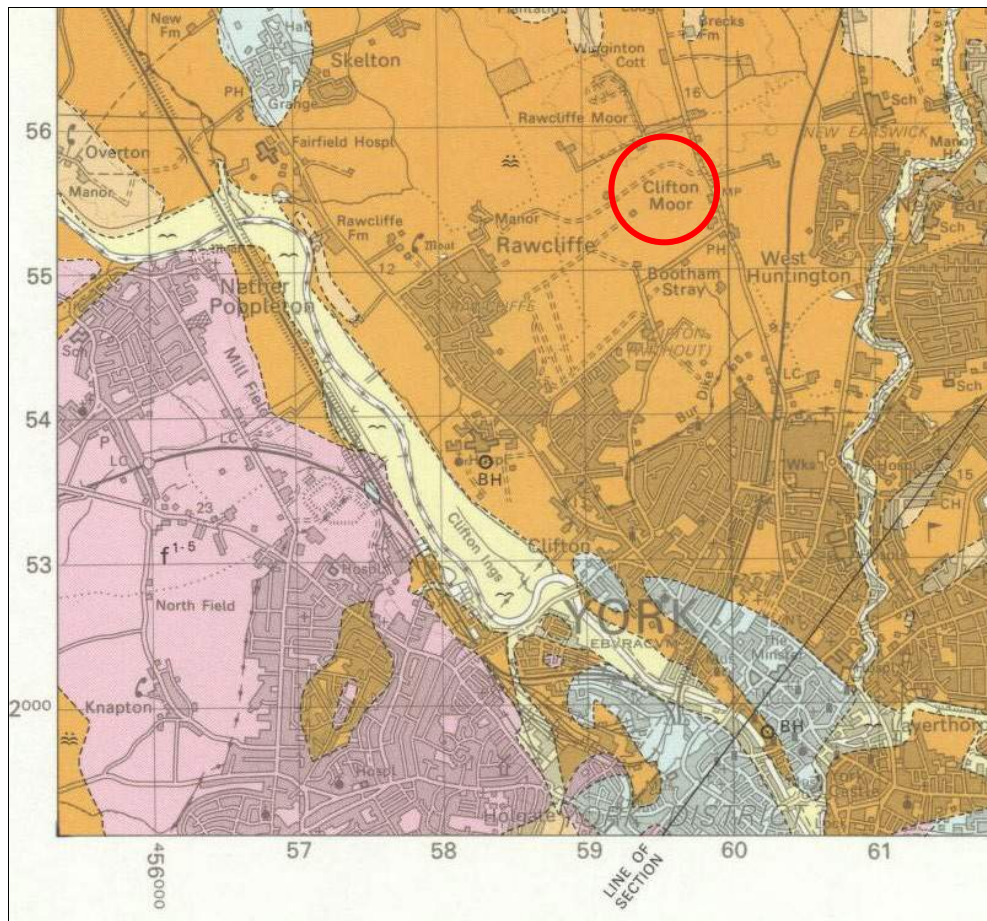


Figure 2.2: Extract from BGS map showing site location with area of the Warp and Lacustrine Clay Formation

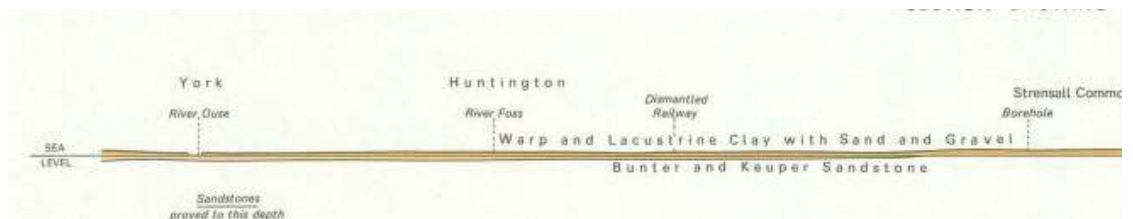


Figure 2.3: Extract from BGS map showing line of section through Warp and Lacustrine Clay Geology

3.0 PROPOSED DEVELOPMENT

3.1 The proposed development comprises of the construction of the following:

- New Unit inc. integral offices – gross external area approximately 1922m².
- Car park & service yard – plan area approximately 1290m².

3.2 In relation to the New Unit the following information is relevant in a flood risk and drainage context:

- The finished floor level is set at approximately 15.05m AOD (subject to further development in the detailed design phase).
- The building and vehicle parking will be served by a sustainable surface water drainage system.
- The building will be served by a positive and sealed foul water drainage system.

3.3 Indicative layout drawings of the proposed development are included in Appendix D.

3.4 Known existing drainage within the development site and in close proximity to the development site are identified on the Topographical Survey in Appendix A.

3.5 A Yorkshire Water pre-planning sewerage enquiry has been submitted for the site (the development site is referred to as Site 2 in the document). The response from Yorkshire Water has been included in Appendix E.

4.0 DISCHARGE OF SURFACE WATER

- 4.1 This Technical Note is to be read in conjunction with the Alan Wood & Partners Drainage Impact Assessment (REF: 43267_Rpt002 DIA Former Sovereign House (IPIF) AC-JKW_13.12.2019 – REV A) that was submitted to the Local Authority as part of the planning application.
- 4.2 The Alan Wood & Partners DIA (Reference in Section 4.1) provides details regarding run off rates, impermeable areas and hierarchy for the disposal of surface water.
- 4.3 As discussed in Sections 2.1.6 to 2.1.8 the existing buildings on the site have been demolished.
- 4.4 From historic aerial photography and site surveys, see Figures 4.1 to 4.4 below, it is clear the site has been heavily developed previously and includes impermeable areas which were positively drained.



Figure 4.1: Photo taken from Google Earth showing existing site



Figure 4.2: Gullies and channel drains can be seen within the hardstanding



Figure 4.3: Gullies and channel drains can be seen within the hardstanding



Figure 4.4: Rainwater pipes can be seen discharging to gullies

- 4.5 Further, it is clear that surface water drainage features were present (channel drain and gullies are clearly evident) and it is unconceivable that the building roofs did not discharge into an underground surface water system. This is supported in Figures 4.1 to 4.4.
- 4.6 From the topographical/utility survey, see Appendix A, it is evident that a pre-existing 225mm diameter surface water connection from the site exists (south east corner), which would be capable of accepting discharge from the previous development at an unrestricted flow. The outfall has also been confirmed by a CCTV drainage survey which can be found in Appendix H.

- 4.7 In addition, there are several private manholes and sewers within the site boundary which are connected to the Yorkshire Water surface water and foul water public system, see Appendix A for locations.
- 4.8 Therefore, it is clearly evident that the existing development was served by an underground drainage system which was positively connected to the public system.
- 4.9 The ground investigation that was carried out on site found the virgin ground to consist of cohesive material up to a depth of 10m below existing ground levels. Cohesive material has very limited infiltration potential and soakaways have thus been discounted on that basis.
- 4.10 There are no watercourses in the vicinity of the site, no evidence of historical soakaways (the underlying ground conditions would prohibit such methods of surface water disposal) and no evidence of attenuation or other SuDS features on the site.
- 4.11 Therefore the only viable option to discharge the surface water is into the Yorkshire Water Public system.
- 4.12 In accordance with NPPF, it is proposed that the curtilage surface water will discharge to the Yorkshire Water public sewer and will be restricted to the level of run off to that from the existing use of the site, less a 30% reduction in the existing discharge rate.
- 4.13 The total proposed surface water discharge rate for the new development (applying the 30% reduction to the existing rate) is as follows (full details can be found in the Alan Wood & Partners DIA):
- SW run-off = $37.8 \times 0.70 = \underline{26.5 \text{ l/s}}$
- 4.14 Excess flows generated within the site will be stored within an attenuation storage tank for storms up to and including a 1 in 100 year storm event with an allowance for +30% climate change (CC).
- 4.15 It has been agreed with Yorkshire Water that the surface water will be discharged out of the site at the single existing connection point at the rate of 26.5 l/s, see Appendix E for confirmation.

-
- 4.16 A copy of the MicroDrainage calculations can be found in Appendix F.
- 4.17 Details of the proposed drainage system can be found in Appendix G.

5.0 DISCHARGE OF FOUL WATER

- 5.1 It is proposed that the foul water is to be discharged from the site in a separate system to the surface water system.
- 5.2 It is proposed that the foul water is to exit the site at one location.
- 5.3 A separate private foul sewer network will be designed and built to meet Building Regulations and discharged into the existing public sewer.
- 5.4 An existing foul water manhole is located within the site boundary to the south which will be used for the foul water.
- 5.5 Details of the foul water drainage can be found in Appendix G.

6.0 CONCLUSIONS

- 6.1 This Technical Note has been prepared to discharge the planning conditions relating to the drainage for a new development located at Former Sovereign House, Kettlestring Lane, York, YO30 4GQ.
- 6.2 It is clearly evident that the previous development was positively drained via an underground private drainage system which connected into the public system within Kettlestring Lane.
- 6.3 Surface Water will be discharged to the existing public sewers at run-off rates equal to that of the existing site, less a 30% reduction. Excess flows will be stored on site in an attenuation tank. All on-site surface water sewers will be designed and constructed to enable them to meet the requirements of the Building Regulations.
- 6.4 Yorkshire Water have recommended that foul water be discharged to an existing public foul water sewer located beneath Kettlestring Lane. The on-site foul water sewers will be designed and constructed to meet the requirements of the Building Regulations.
- 6.5 Due to the site topography being maintain to similar levels to that of the existing, both surface and foul water flows will discharge by gravity into the adopted sewer network
- 6.6 This Technical Note, supporting calculations and sketches provide a robust case for justifying the means of foul and surface water drainage and the site can be suitably, safely and sustainably drained.

APPENDIX A

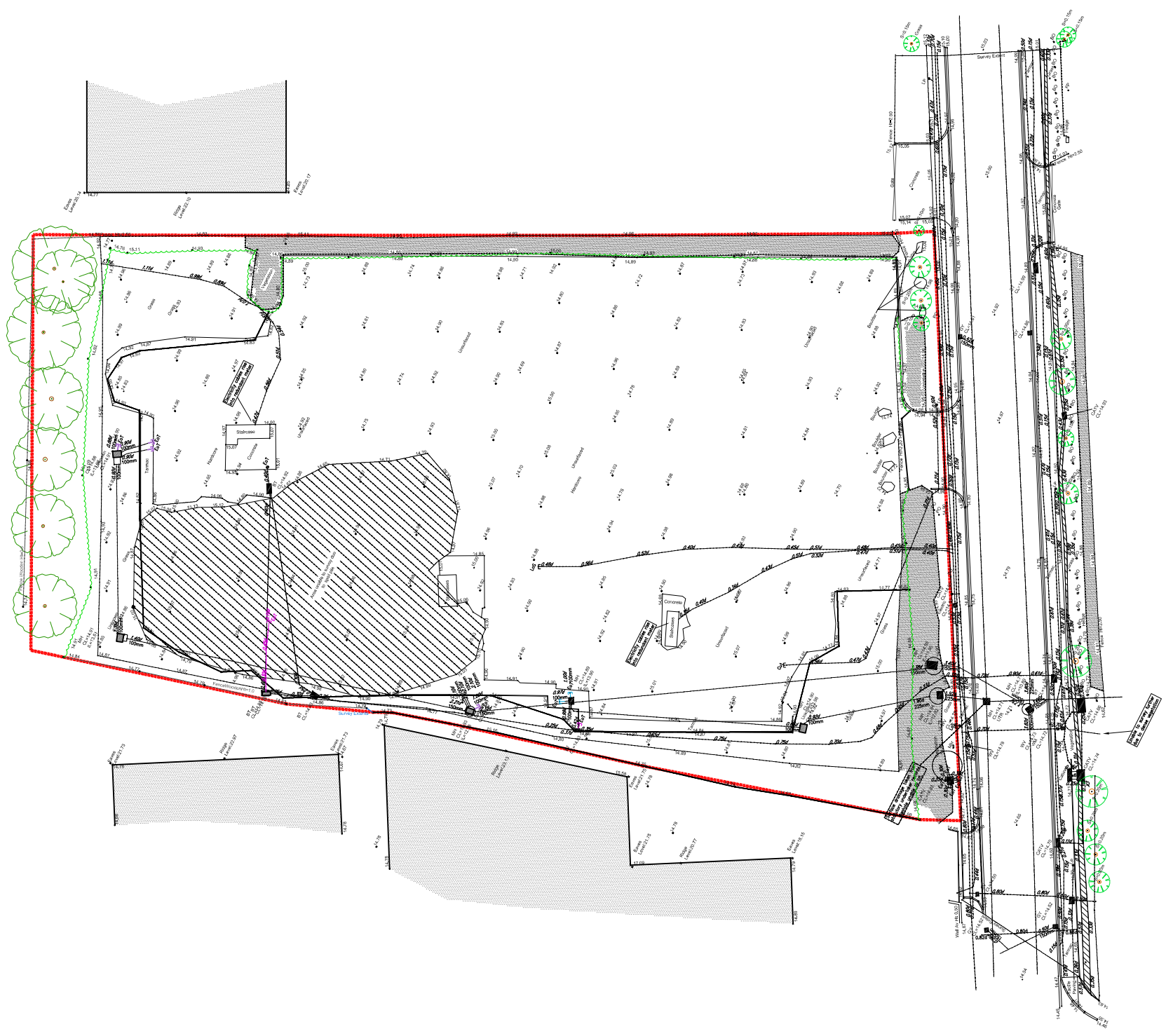
Site Surveys

All site dimensions shall be verified by the contractor on site prior to work commencing.

Do not scale from this drawing. Only work to written dimensions.

This drawing is the property of Ellis Healey Architecture and is not to be reproduced, copied, or disseminated in any form or by any means without the prior written consent of Ellis Healey Architecture.

NOTES



Rev	Description	Issued to	By	Date	Author
Rev A	Updated to latest survey	18.12.2019	AFK		HeadOffice



PLANNING

PROJECT: PROPOSED DEVELOPMENT
FORMER SOVEREIGN HOUSE SITE
1000 MOOR TRADE PARK
YORK

TITLE: EXISTING SITE PLAN

DRAWING NO: 1862 PL 101A

BY: AFK DATE: NOV 2019

SCALE: 1:500

Drawn: Gabe Akers
18.11.2019
g.akers@ellishealey.com

APPENDIX B

BGS Borehole Records

BOREHOLE LOG

York : Clifton Airfield.

Location

Borehole No. 1 Ground Level 14.40 m. A.O.D. Date 3.2.83

JW 20740 P178

STRATA	Strata thickness	Legend	Depth below surface	N	c kN/m ²	ø deg.	m %	Y kN/m ³
Topsoil	0.20		0.20					
Light brown veined grey, weathered, overconsolidated clay	1.90		0.50 1.50 2.10	10	102	0	25.2	19.2
Medium brown/dark greyish brown overconsolidated, laminated clay. Partings of silt	2.50		3.00 4.50	21 23				
Medium/dark brown sandy boulder clay. Occasional gravel and pebble	2.90 m. penetrated		4.60 6.00 7.00	39 86 X				
			7.50					

X = extrapolated value

ø = angle of shearing resistance

Y = bulk density

c = cohesion

m = moisture content

N = standard penetration value

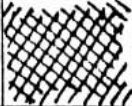


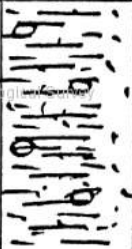
Water struck: Nil.

Final Standing Level Nil.

Water levels may be subject to seasonal or tidal variation and should not be taken as constant.

BOREHOLE LOGLocation York : Clifton Airfield.Borehole No. 9 Ground Level 13.73 m. A.O.D. Date 5.2.83

JW 20740 P178

STRATA	Strata thickness	Legend	Depth below surface	N	c kN/m ²	ø deg.	m %	Y kN/m ³
Concrete	0.30		0.30					
Light brown, veined grey, weathered overconsolidated clay	1.50		0.50	12				
			1.50	24				
Light brown veined grey/dark greyish brown overconsolidated, laminated clay. Partings of silt	2.30		1.80					
			3.00		50.8	0	31.3	18.7
Medium brown sandy boulder clay. Occasional gravel and pebble	3.40 m. penetrated		4.10					
			4.50	36				
			6.00		152	0	11.9	21.9
			7.00	62				
			7.50					

X = extrapolated value

ø = angle of shearing resistance

Y = bulk density

c = cohesion

m = moisture content

N = standard penetration value

Water struck: Nil.

Final Standing Level Nil.

Water levels may be subject to seasonal or tidal variation and should not be taken as constant.

BOREHOLE LOGLocation York : Clifton Airfield.Borehole No. 10 Ground Level 13.93 m. A.O.D. Date 3.2.83

JW 20740 P178

STRATA	Strata thickness	Legend	Depth below surface	N	c kN/m ²	ø deg.	m %	Y kN/m ³
Topsoil	0.20		0.20					
Light yellowish brown, veined grey, weathered, overconsolidated clay	1.80		0.50 1.50 2.00	12 20				
Dark greyish brown, veined grey, overconsolidated, laminated clay	2.80		3.00 4.50 4.80	25	32.8	0	28.9	18.0
Medium brown, sandy boulder clay. Occasional gravel and cobble	2.70 m. penetrated		6.00 7.00 7.50	59	52.6	0	13.2	21.8

X = extrapolated value

ø = angle of shearing resistance

Y = bulk density

c = cohesion

m = moisture content

N = standard penetration value

Water struck: Nil.

Final Standing Level Nil.

Water levels may be subject to seasonal or tidal variation and should not be taken as constant.

Boring diameter (mm) 150 to 1.00m
 Grid Reference SE 591 552
 Date 23 February 1987
 Ground level (m.O.D.) 14.63

Description	Reduced Level m.O.D.	Legend	Depth & Thickness (m)	Samples/Tests	
				Depth (m)	Type
Firm mottled orange, brown and grey very sandy CLAY with pockets and bands of orange grey sandy silty clay	13.43		0.50 1.20	0.50 1.00 - 1.45	D U(40)
Firm becoming stiff mottled brown silty CLAY with occasional small lenses of grey clay and very occasional fine gravel; frequent root remainsbecoming poorly laminated towards base	11.83		(1.60) 2.80	1.45 1.70 2.00 - 2.45 2.45	D D U(50) D
Firm dark brown laminated silty CLAY, with partings of light grey silt and occasionally of light brown fine sandfrequency of partings diminishes towards base	9.03		(2.80) 5.60	3.00 3.50 - 3.95 3.95 4.50 5.00 - 5.45 5.45	D U(70) D D U(70) D
Firm reddish brown sandy silty CLAY with gravel and occasional small lenses of dark brown silty clay and light brown medium sand initially (TILL)	7.63		(1.40) 7.00	6.00 6.50 - 6.95 6.95	D U(70) D
END OF BOREHOLE					

Remarks: Scale 1:50
 No groundwater encountered

Sample/Test Key
 D Disturbed Sample
 B Bulk Sample
 W Water Sample
 U() Undisturbed Sample (No. of blows)
 P Piston Sample
 S() Standard penetration test (N value)
 C() Cone penetration test (N value)
 V Vane Test

Excavation Method MECHANICAL EXCAVATOR	Dimensions	Ground Level (mOD) 14.63	Client HENRY BOOT PROJECTS LIMITED	Job Number NE1581
	Location AS PLAN	Dates 19/02/97 - 19/02/97	Engineer W.A. FAIRHURST AND PARTNERS	Sheet 1/1

Depth m	Samples / Tests	Water Depth m	Field Records	Level (mOD)	Depth m (Thickness)	Description	Legend	Water
				14.43	(0.20)	TOPSOIL		
0.60	B			13.83	0.20	Light brown and brown silty CLAY		
1.00	D				(0.60)			
2.00	D				0.80	Stiff brown and grey silty CLAY with some laminations at depth		
			C* = 80-110kN/m2		(2.90)			
3.20	D							
3.50	D							
			19/02/97: DRY	10.93	3.70	Trial Pit completed at 3.70m		

Plan

Remarks
 Pit walls remained vertical and stable
 Trial pit remained dry
 * Hand shear vane test

See key sheet for symbols and abbreviations

Scale (approx) 1:25	Logged By DS/DS	Figure No. NE1581.TP6
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Excavation Method MECHANICAL EXCAVATOR		Dimensions	Ground Level (mOD) 14.54	Client HENRY BOOT PROJECTS LIMITED	Job Number NE1581
		Location AS PLAN	Dates 19/02/97 - 19/02/97	Engineer W.A. FAIRHURST AND PARTNERS	Sheet 1/1

Depth m	Samples / Tests	Water Depth m	Field Records	Level (mOD)	Depth m (Thickness)	Description	Legend	Water
					(0.20)	MADE GROUND: topsoil		
				14.34	0.20 (0.30)	MADE GROUND: brown silty clay with some ash and stone		
0.60	D			14.04	0.50 (0.35)	Firm light brown silty CLAY		
1.00	D			13.69	0.85	Stiff grey and brown silty CLAY with laminations at depth		
1.60	D				(2.65)			
2.40	D							
3.30	D							
			19/02/97: DRY	11.04	3.50			
						Trial Pit completed at 3.50m		

Plan

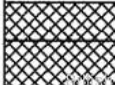
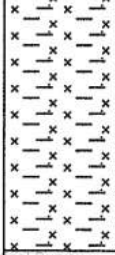
Remarks

Pit walls remained vertical and stable
 Trial pit remained dry

See key sheet for symbols and abbreviations

Scale (approx) 1:25	Logged By DS/DS	Figure No. NE1581.TP9
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DATE: SEPT 1995 SCALE: 1 to 50 BORING METHOD: MECHANICAL EXCAVATOR Sheet: 1

Drilling & Casing Progress	SAMPLE/TEST		SPT N - value or COHESION	DESCRIPTION	O D LEVEL	LEGEND	DEPTH
	Type & No.	Depth(M)					
28TH	U B 1	1.00	122.50	TOPSOIL			0.0
		1.20 - 1.40		TOPSOIL & friable SUBSOIL			0.25
				Stiff dark brown & grey silty CLAY			0.55
28TH							2.20

DUNELM DRILLING COMPANY
TEL 091-526-2534 FAX 091-517-0085

BOREHOLE LOGSHEET

Water Observations, Remarks, Etc
 Trial pit dry
 Visible desiccation to 0.60m

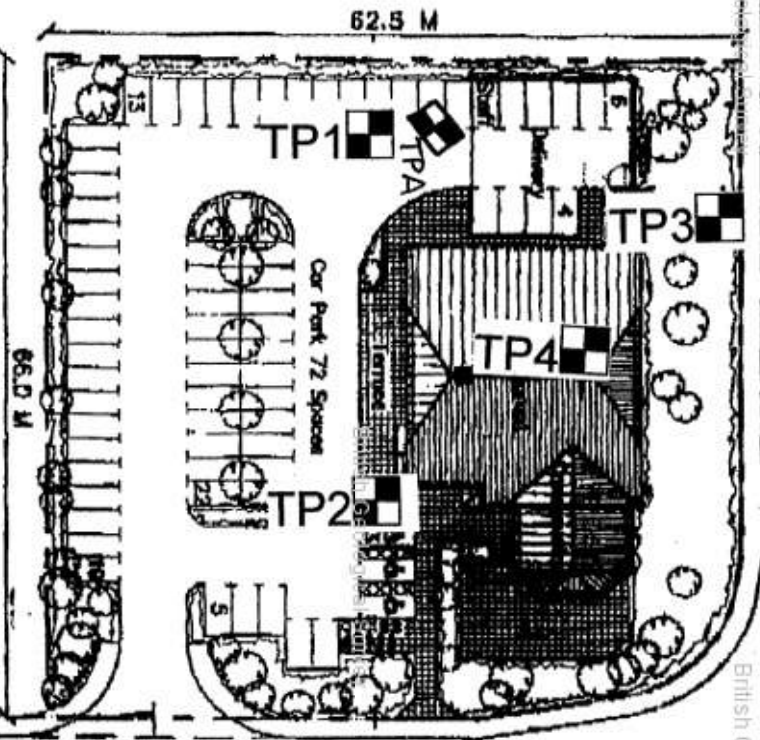
KETTLESTRING LANE

CLETON MOORGATE

British Geological Survey

2.4 x 60 M Visibility splay

CENTURION PARK - SITE ACCESS



Schedule of Accommodation

Site Area	1 Acre (4047 sq.m)
Restaurant	5000 sq.ft (464 sq.m)
Conservatory	1000 sq.ft (92 sq.m)
First Floor	1805 sq.ft (168 sq.m)

B: Car Park Access Reviewed 18/8/95
 A: Site Plan Revised 9/8/95

RESTAURANT British Geological Survey
CLETON MOORGATE
YORK

SITE PLAN AS PROPOSED

Scale	1:500 (Reduced)
Date	May 1995
Drawn by	

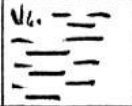
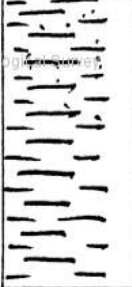

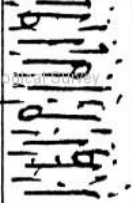
FARRELL & CLARK

ARCHITECTS: YORK PLANNERS
 PROJECT MANAGER: British Geological Survey

2 Storey, 1st Floor, 2nd Floor
 1st Floor, 2nd Floor, 3rd Floor
 3-11 Spaxwold
 London SW16 3TX
 TEL: 0181 871 2000
 FAX: 0181 871 2001

BOREHOLE LOGLocation York : Clifton Airfield.Borehole No. 16 Ground Level 13.91 m. A.O.D. Date 1.2.83

JW 20740 P17B

STRATA	Strata thickness	Legend	Depth below surface	N	c kN/m ²	φ deg.	m %	Y kN/m ³
Topsoil	0.30		0.30					
Light brown weathered clay, sandy in the upper part, veined grey in the lower part	1.80		0.50 1.50 2.10	8	41.4	0	29.0	19.1
Dark greyish brown, over-consolidated, laminated clay. Partings of silt	3.30		3.00 4.00 5.40	25	85.9	0	25.2	19.3
Medium brown sandy boulder clay. Occasional gravel	2.10 m. penetrated		6.00 7.00	33 42				
			7.50					

X = extrapolated value

φ = angle of shearing resistance

Y = bulk density

c = cohesion

m = moisture content

N = standard penetration value

Water struck: Nil.

Final Standing Level Nil.

Water levels may be subject to seasonal or tidal variation and should not be taken as constant.

APPENDIX C

Ground Investigation Results

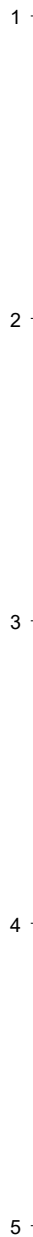


Trial Pit Log

Trialpit No
TP1
Sheet 1 of 1

Project Name: Sovereign House, Clifton Moor	Project No. 43366 (3)	Co-ords: 459331.00 - 455191.00 Level: 15.00	Date 27/11/2019
Location: Clifton Moor, York	Dimensions (m): Depth 0.65		Scale 1:25 Logged A Clark
Client: IPIF Co Fox Lloyd Jones Ltd		0.95	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.45	ES		0.20	14.80		MADE GROUND: Demolition rubble comprising bricks, tarmac, concrete, plastic, and wood of varying sizes.
				0.60	14.40		MADE GROUND: Loose dark grey slightly clayey SAND and GRAVEL. Gravel of rounded medium sandstone, and coarse angular brick and limestone.
				0.65	14.35		Soft to firm orange grey slightly sandy silty CLAY. End of pit at 0.65 m



Remarks: Some seepage into base of pit. CBR1 undertaken at 0.65m.

Stability:





Trial Pit Log

Trialpit No

TP2

Sheet 1 of 1

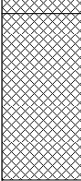
Project Name: Sovereign House, Clifton Moor

Project No.
43366 (3)Co-ords: 459311.00 - 455169.00
Level: 15.00Date
27/11/2019

Location: Clifton Moor, York

Dimensions (m): 0.95
Depth 0.60Scale
1:25Logged
A Clark

Client: IPIF Co Fox Lloyd Jones Ltd

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.05	14.95		MADE GROUND: Limestone hardcore. MADE GROUND: Loose dark grey slightly clayey SAND and GRAVEL. Gravel of rounded medium sandstone, and coarse angular brick and limestone.
				0.60	14.40		Firm grey brown slightly sandy silty CLAY.
				0.60	14.40		End of pit at 0.60 m




1
2
3
4
5

Remarks: Some seepage into base of pit. Perched water at the top of the clay. CB2R2 undertaken at 0.60m.

Stability:

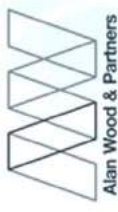


Key

-  Windowless Sampler Boreholes
-  (G) – with ground gas monitoring
-  CBR Test Location



DO NOT SCALE



Client. IPIF Co Fox Lloyd Jones Limited	
Project. Sovereign House, Clifton Moor	
Drawing. Borehole Location Plan	
Date. 28.11.19	Scale. NTS
Drawn by. AC	Check by. JMS
Approved by. JMS	
Status: FOR INFORMATION	
Job no. 43366	Fig. no. 001
Rev. Rev.	





Borehole Log

Borehole No.

BH1

Sheet 1 of 1

Project Name: Sovereign House, Clifton Moor	Project No. 43366 (3)	Co-ords: 459271.00 - 455234.00	Hole Type WLS
Location: Clifton Moor, York		Level: 16.00	Scale 1:50
Client: IPIF Co Fox Lloyd Jones Ltd		Dates: 27/11/2019 - 27/11/2019	Logged By A Clark

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.25			0.25	15.75	<p>TOPSOIL: Loose brown clayey SAND with abundant rootlets.</p>	
		0.40	ES		0.80	15.20	<p>MADE GROUND: Loose grey brown slightly clayey SAND and GRAVEL. Gravel of medium angular flints, fine and medium rounded chalk, and fine to coarse gravel sized fragments of concrete.</p>	
		1.00	B		0.85	15.15		
		1.00	ES				<p>MADE GROUND: Loose grey brown clayey slightly gravelly SAND. Gravel of angular coarse limestone. [possible relic topsoil]</p>	
		1.20		N=11 (2,1/2,3,3,3)			<p>Medium strength, orange brown mottled grey, soft to firm, slightly sandy silty CLAY.</p>	
		2.00		N=12 (2,2/3,3,3,3)	1.50	14.50	<p>Medium strength, grey brown, firm to stiff, slightly sandy silty CLAY.</p>	
		2.50	B					
		3.00		N=9 (2,2/2,2,2,3)				
		4.00		N=11 (2,2/2,3,3,3)				
		5.00		N=11 (2,3/2,3,3,3)	4.60	11.40	<p>Medium strength, brown, firm, very sandy CLAY.</p>	
				5.00	11.00		End of borehole at 5.00 m	

Remarks
Dry.





Borehole Log

Borehole No.

BH2

Sheet 1 of 1

Project Name: Sovereign House, Clifton Moor

Project No.
43366 (3)

Co-ords: 459301.00 - 455245.00

Hole Type
WLS

Location: Clifton Moor, York

Level: 16.00

Scale
1:50

Client: IPIF Co Fox Lloyd Jones Ltd

Dates: 27/11/2019 - 27/11/2019

Logged By
A Clark

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.25	15.75	<p>TOPSOIL: Loose brown clayey SAND with abundant rootlets.</p>	
		0.40	ES		0.70	15.30	<p>MADE GROUND: Loose grey brown slightly clayey SAND and GRAVEL. Gravel of medium angular flints, fine and medium rounded chalk, and fine to coarse gravel sized fragments of concrete.</p>	
		1.00	ES	N=9 (2,2/2,1,3,3)	1.50	14.50	<p>Medium strength, orange brown mottled grey, soft to firm, slightly sandy silty CLAY.</p>	
		1.20						
		2.00	N=10 (2,2/2,2,3,3)		3.60	12.40	<p>Medium strength, grey brown, firm, slightly sandy silty CLAY with frequent silt partings.</p>	
		3.00	N=11 (2,2/2,3,3,3)					
		4.00	N=9 (2,2/2,2,2,3)		5.00	11.00	<p>Medium strength, brown, soft to firm, very sandy CLAY.</p>	
	5.00	N=31 (4,5/6,8,8,9)						
		End of borehole at 5.00 m						

Remarks
Dry.





Borehole Log

Borehole No.

BH3

Sheet 1 of 1

Project Name: Sovereign House, Clifton Moor	Project No. 43366 (3)	Co-ords: 459302.00 - 455211.00	Hole Type WLS
Location: Clifton Moor, York		Level: 16.00	Scale 1:50
Client: IPIF Co Fox Lloyd Jones Ltd		Dates: 27/11/2019 - 27/11/2019	Logged By A Clark

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth (m)	Type	Results								
Well	▼	0.20	ES		0.45	15.55	Legend	MADE GROUND: Demolition rubble comprising bricks, tarmac, concrete, plastic, and wood of varying sizes.	1			
		0.50	ES		0.60	15.40		MADE GROUND: Limestone hardcore.				
		1.00	ES		0.70	15.30		MADE GROUND: Loose grey brown clayey slightly gravelly SAND. Gravel of angular coarse limestone. [possible relic topsoil]				
		1.20		N=10 (2,2/2,2,2,4)	1.20	14.80		Medium strength, grey orange brown mottled grey, soft occasionally firm, slightly sandy silty CLAY.				
		2.00		N=12 (2,2/2,3,3,4)				Medium strength, grey brown, firm, slightly sandy silty CLAY with frequent silt partings.				
		3.00		N=11 (2,2/2,3,3,3)								
		4.00		N=14 (2,2/4,3,3,4)	3.95	12.05		Medium strength, brown, firm, very sandy CLAY. <u>Sand lens.</u>				
		5.00		N=24 (3,4/5,6,6,7)	5.00	11.00		<u>No recovery - wet sand lens.</u>				
		End of borehole at 5.00 m								5		
										6		
								7				
								8				
								9				
								10				

Remarks
Perched water located between 4.80 and 4.90mbgl.





Borehole Log

Borehole No.

BH4

Sheet 1 of 1

Project Name: Sovereign House, Clifton Moor	Project No. 43366 (3)	Co-ords: 459301.00 - 455186.00	Hole Type WLS
Location: Clifton Moor, York		Level: 16.00	Scale 1:50
Client: IPIF Co Fox Lloyd Jones Ltd		Dates: 27/11/2019 - 27/11/2019	Logged By A Clark

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.65	15.35		MADE GROUND: Demolition rubble comprising bricks, tarmac, concrete, plastic, and wood of varying sizes.
		0.80	ES		0.75	15.25		MADE GROUND: Loose grey brown clayey slightly gravelly SAND. Gravel of angular coarse limestone, medium and coarse angular flints, and medium to coarse sized concrete fragments. [possible relic topsoil]
		1.20		N=10 (1,2/2,2,3,3)	1.10	14.90		Medium strength, grey orange brown mottled grey, soft occasionally firm, slightly sandy silty CLAY.
		2.00		N=12 (3,2/2,3,3,4)				Medium strength, grey brown, firm to stiff, slightly sandy silty CLAY.
		3.00		N=13 (2,2/3,3,3,4)				
		4.00		N=15 (2,3/3,3,4,5)	3.80	12.20		Medium to high strength, brown, firm, very sandy CLAY.
	5.00		N=27 (3,2/3,8,7,9)	5.00	11.00		End of borehole at 5.00 m	

Remarks
Dry.





Borehole Log

Borehole No.

BH5

Sheet 1 of 1

Project Name: Sovereign House, Clifton Moor

Project No.
43366 (3)

Co-ords: 459329.00 - 455199.00

Hole Type
WLS

Location: Clifton Moor, York

Level: 16.00

Scale
1:50

Client: IPIF Co Fox Lloyd Jones Ltd

Dates: 27/11/2019 - 27/11/2019

Logged By
A Clark

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30			0.30	15.70		<p>MADE GROUND: Demolition rubble comprising bricks, tarmac, concrete, plastic, and wood of varying sizes.</p> <p>MADE GROUND: Limestone hardcore.</p> <p>MADE GROUND: MADE GROUND: Loose grey brown clayey slightly gravelly SAND. Gravel of angular coarse limestone. [possible relic topsoil]</p> <p>Medium strength, grey orange brown mottled grey, soft occasionally firm, slightly sandy silty CLAY.</p> <p>Medium strength, grey brown, firm, slightly sandy silty CLAY with frequent silt partings.</p> <p>Medium strength, brown, soft to firm, very sandy CLAY.</p> <p><u>Sand Lens.</u></p>
		0.60	ES		0.50	15.50		
		1.20		N=9 (2,2/2,2,2,3)	0.80	15.20		
		1.50	B		1.00	15.00		
		2.00		N=11 (2,2/2,2,3,4)				
		3.00		N=11 (2,2/2,3,3,3)				
		3.60			3.60	12.40		
		4.00		N=12 (2,2/3,3,2,4)				
		5.00		N=23 (3,3/4,4,7,8)	5.00	11.00		

Remarks
Dry.





Alan Wood & Partners

Borehole Log

Borehole No.

BH6

Sheet 1 of 1

Project Name: Sovereign House, Clifton Moor	Project No. 43366 (3)	Co-ords: 459322.00 - 455176.00	Hole Type WLS
Location: Clifton Moor, York		Level: 15.00	Scale 1:50
Client: IPIF Co Fox Lloyd Jones Ltd		Dates: 27/11/2019 - 27/11/2019	Logged By A Clark

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
Well		0.50	ES		0.40	14.60	MADE GROUND: Demolition rubble comprising bricks, tarmac, concrete, plastic, and wood of varying sizes.	
		1.00	ES		0.70	14.30		
		1.20		N=10 (2,2/2,2,2,4)	1.10	13.90	Medium strength, orange brown mottled grey, soft to firm, slightly sandy silty CLAY.	Low to medium strength, grey brown, firm to stiff, slightly sandy silty CLAY.
		2.00		N=13 (2,1/2,3,3,5)				
		3.00		N=8 (2,2/2,2,2,2)				
		4.00		N=10 (2,1/2,2,3,3)	4.00	11.00	Medium strength, brown, firm, very sandy CLAY.	
		5.00		N=17 (2,2/2,4,4,7)	5.00	10.00	End of borehole at 5.00 m	

Remarks
Dry.



APPENDIX D

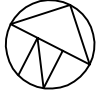
Site Plan

All site dimensions shall be verified by the contractor on site prior to work commencing.

Do not scale from this drawing. Only work to written dimensions.

This drawing is the property of Ellis Healey Architecture and shall not be used for any other project without the prior written consent of Ellis Healey Architecture.

NOTES



Size GIA	Haunch	Technical Considerations
20,000 sq ft (1858 sq m)	6.5m	21 no. Standard spaces 1 no. Disabled spaces 3 no. EVCP 8 no. Covered Cycle parking spaces 18 no. Uncovered Cycle Parking Spaces



Revision	Description	Date	Initials
Rev E	Updated per comments	11.12.2019	AFK
Rev D	Updated per survey	10.12.2019	AFK
Rev C	Updated per survey	09.12.2019	AFK
Rev B	Updated per comments	20.11.2019	AFK
Rev A	Updated to survey	07.11.2019	DFE
Drawn by	Colin O'Riordan		



PLANNING

PROJECT: PROPOSED DEVELOPMENT
FORMER SOVEREIGN HOUSE SITE
1 MOON MOOR TRADE PARK
YORK

TITLE: PROPOSED SITE PLAN

DRAWING NO: **1862 PL 102E**

BY CHECKED: AFK DATE: NOV 2019

SCALE: 1:500

100% YORK
100% YORK
100% YORK

APPENDIX E

Yorkshire Water Pre-Planning Enquiry

**Mr S Grayson
Alan Wood & Partners
Omega 2
Monks Cross Drive
Huntington
York
YO32 9GZ**

**Yorkshire Water Services
Developer Services
Sewerage Technical Team
PO BOX 52
Bradford
BD3 7AY**

**Tel: 0345 120 8482
Fax: (01274) 372 834**

**Email:
technical.sewerage@yorkshirewater.co.uk**

**Your Ref: AWP054
Our Ref: V018197**

**For telephone enquiries ring:
Chris Roberts on 0345 120 8482**

5th November 2019

Dear Mr Grayson,

Site1 on Seafire Close/ Site2 on Former Sovereign House/ Site3 on Kettlestring Lane, YO30 4XA - Pre-Planning Sewerage-Enquiry-Commercial On T614075

Thank you for your recent enquiry. Our charge of £164.00 (plus VAT) will be added to your account with us, reference AWP054. You will receive an invoice for your account in due course.

Please find enclosed a complimentary extract from the Statutory Sewer Map which indicates the recorded position of the public sewers. Please note that as of October 2011 and the private to public sewer transfer, there are many uncharted Yorkshire Water assets currently not shown on our records. The following comments reflect our view, with regard to the public sewer network only, based on a 'desk top' study of the site and are valid for a maximum period of twelve months.

Development of the site should take place with separate systems for foul and surface water drainage. The separate systems should extend to the points of discharge to be agreed.

Site 1

Foul Water

Foul water domestic waste should discharge to the 225 mm diameter public foul sewer recorded in Seafire Close, at a point to the east of the site.

The developer's attention is drawn to Requirement H3 of the Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order.

Foul water from kitchens and/or food preparation areas of any restaurants and/or canteens etc. must pass through a fat and grease trap of adequate design before any discharge to the public sewer network.

Surface Water

Sustainable Drainage Systems (SuDS), for example the use of soakaways and/or permeable hardstanding etc, may be a suitable solution for surface water disposal appropriate in this situation. You are advised to seek comments on the suitability of SuDS in this instance from the appropriate authorities.



If other methods of surface water disposal are not viable and subject to providing satisfactory evidence as to why they have been discounted, curtilage surface water discharges to the public sewer will be restricted to the level of run-off - i.e. same rate of discharge - to that from the existing use of the site less a 30% reduction in the existing discharge. Any discharge of surface water from the site should discharge to similar points of connection to that of the existing use of the site. You will need to demonstrate positive drainage, based on a 1 in 1 year storm, to the public sewer to Yorkshire Water by means of investigation and calculation carried out at your expense.

To do this, Yorkshire Water requires to see existing and proposed drainage layouts with pipe sizes, gradients and connection points, measured impermeable areas of the present and proposed use of the site, along with the calculations that show the existing and proposed discharge rate from the site to the public sewer.

Site 2

Foul Water

Foul water domestic waste should discharge to the 225 mm diameter public foul sewer recorded in Kettlestring Lane, at a point to the south of the site.

The developer's attention is drawn to Requirement H3 of the Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order.

Foul water from kitchens and/or food preparation areas of any restaurants and/or canteens etc. must pass through a fat and grease trap of adequate design before any discharge to the public sewer network.

Surface Water

Sustainable Drainage Systems (SuDS), for example the use of soakaways and/or permeable hardstanding etc, may be a suitable solution for surface water disposal appropriate in this situation. You are advised to seek comments on the suitability of SuDS in this instance from the appropriate authorities.

If other methods of surface water disposal are not viable and subject to providing satisfactory evidence as to why they have been discounted, curtilage surface water discharges to the public sewer will be restricted to the level of run-off - i.e. same rate of discharge - to that from the existing use of the site less a 30% reduction in the existing discharge. Any discharge of surface water from the site should discharge to similar points of connection to that of the existing use of the site. You will need to demonstrate positive drainage, based on a 1 in 1 year storm, to the public sewer to Yorkshire Water by means of investigation and calculation carried out at your expense.

To do this, Yorkshire Water requires to see existing and proposed drainage layouts with pipe sizes, gradients and connection points, measured impermeable areas of the present and proposed use of the site, along with the calculations that show the existing and proposed discharge rate from the site to the public sewer.

Site 3

Foul Water

Foul water domestic waste should discharge to the 150 mm diameter public foul sewer recorded in Kettlestring Lane, at a point to the east of the site.

Foul water from kitchens and/or food preparation areas of any restaurants and/or canteens etc. must pass through a fat and grease trap of adequate design before any discharge to the public sewer network.

Surface Water

The developer's attention is drawn to Requirement H3 of the Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order.

Sustainable Drainage Systems (SuDS), for example the use of soakaways and/or permeable hardstanding etc, may be a suitable solution for surface water disposal appropriate in this situation. You are advised to seek comments on the suitability of SuDS in this instance from the appropriate authorities.

If other methods of surface water disposal are not viable and subject to providing satisfactory evidence as to why they have been discounted, curtilage surface water discharges to the public sewer will be restricted to the level of run-off - i.e. same rate of discharge - to that from the existing use of the site less a 30% reduction in the existing discharge. Any discharge of surface water from the site should discharge to similar points of connection to that of the existing use of the site. You will need to demonstrate positive drainage, based on a 1 in 1 year storm, to the public sewer to Yorkshire Water by means of investigation and calculation carried out at your expense.

To do this, Yorkshire Water requires to see existing and proposed drainage layouts with pipe sizes, gradients and connection points, measured impermeable areas of the present and proposed use of the site, along with the calculations that show the existing and proposed discharge rate from the site to the public sewer.

Other Observations

Please note further restrictions on surface water disposal from the site may be imposed by other parties. You are strongly advised to seek advice/comments from the Environment Agency/Land Drainage Authority/Internal Drainage Board, with regard to surface water disposal from the site.

Surface water run-off from communal parking (greater than 800 sq metres or more than 50 car parking spaces) and hardstanding must pass through an oil, petrol and grit interceptor/separator of adequate design before any discharge to the public sewer network. Roof water should not pass through the traditional 'stage' or full retention type of interceptor/separator. It is good drainage practice for any interceptor/separator to be located upstream of any on-site balancing, storage or other means of flow attenuation that may be required.

Surface water run-off from areas of vehicular parking and/or hardstanding etc. must pass through an oil, petrol and grit interceptor/separator of adequate design before any discharge to the public sewer network. Roof water should not pass through the traditional 'stage' or full retention type of interceptor/separator.

It is imperative, however that surface water run-off from the forecourt of petrol stations, areas used for the delivery of fuel, areas used for and immediately adjacent to vehicle washing facilities and/or other similar areas where detergent is likely to be used is not discharged to any public surface water sewer network. Surface water from such areas must pass through an oil, petrol and grit interceptor/separator of adequate design before discharge to the public foul or combined sewer network. A trade effluent consent - that may be conditional and, amongst other things, place a restriction on the rate of discharge to public sewer - may be required for such discharges. The developer is advised to contact Yorkshire Water's Industrial Waste Section (telephone 0345 1242424) about any such proposal.

It is good drainage practice for any interceptor/separator to be located upstream of any on-site balancing, storage or other means of flow attenuation that may be required.

Under the provisions of section 111 of the Water Industry Act 1991 it is unlawful to pass into any public sewer (or into any drain or private sewer communicating with the public sewer network) any items likely to cause damage to the public sewer network interfere with the free flow of its contents or affect the treatment and disposal of its contents. Amongst other things this includes fat, oil, nappies, bandages, syringes, medicines, sanitary towels and incontinence pants. Contravention of the provisions of section 111 is a criminal offence.

Ben Ions

From: Stuart Grayson
Sent: 08 April 2020 13:10
To: Ben Ions; Chris Hudson
Subject: FW: Site1 On Seafire Close/ Site2 On Former Sovereign House/ Site3 On Kettlestring Lane, YO30 4XA - Pre-Planning Sewerage-Enquiry-Commercial On T614075
Attachments: pic27644.gif; IPIF-AWP-ZZ-XX-DR-C-0021 - Existing Impermeable Areas Seafire Close.pdf; pic32662.jpg; IPIF-AWP-ZZ-XX-DR-C-0020 - Existing Impermeable Areas Former Sovereign House.pdf; IPIF-AWP-ZZ-XX-DR-C-0021 - Existing Impermeable Areas Seafire Close.002.pdf

FYI

-----Original Message-----

From: Chris.Roberts@yorkshirewater.co.uk <Chris.Roberts@yorkshirewater.co.uk> On Behalf Of technical.sewerage@yorkshirewater.co.uk
Sent: 08 April 2020 13:01
To: Stuart Grayson <Stuart.Grayson@alanwood.co.uk>
Subject: Site1 On Seafire Close/ Site2 On Former Sovereign House/ Site3 On Kettlestring Lane, YO30 4XA - Pre-Planning Sewerage-Enquiry-Commercial On T614075

Hi Stuart,

Thanks for the additional information.

Kettlestring Lane

As proposed 67.6 l/s can discharge via the northern and eastern outfalls

Sovereign House

As proposed 26.5 l/s can discharge to the 1000 mm x 1200 mm rectangular concrete surface water sewer to the south of the site.

Seafire Close

As proposed 8.8 l/s can discharge to the 575 mm surface water sewer in Seafire Close.

Kind Regards

|-----+-----|
| (Embedded image moved |
to file: pic27644.gif)	Chris Roberts
We are open Monday to	Sewerage Technical Team
Friday	Developer Services
0800 – 1700	
We are closed Bank	Tel: 0345 1 20 84 82
Holidays and Weekends	
-----+-----	

*** Please note, all correspondence must be sent to technical.sewerage@yorkshirewater.co.uk and will be responded to within 10 working days ***

Yorkshire Water plays a key role in protecting public health and we're doing everything we can to continue to provide essential water and waste water services to customers during the Covid-19 outbreak. As a result we have decided to scale back some of our developer services activity. This is to allow colleagues from our developer services team to support frontline colleagues in delivering our core services to customers. This will mean we aren't able to respond as quickly as usual. Thank you for your patience, we will keep you updated as the situation progresses.

```
|----->
| From:   |
|----->
>-----|
|Stuart Grayson <Stuart.Grayson@alanwood.co.uk> |
>-----|
|----->
| To:     |
|----->
>-----|
|Technical Sewerage@NotesMail, Chris Roberts/Water Business Unit/YWS/Yorkshire Water@O365
|
>-----|
|----->
| Date:   |
|----->
>-----|
|16/03/2020 20:53 |
>-----|
|----->
| Subject: |
|----->
>-----|
|RE: Site1 On Seafire Close/ Site2 On Former Sovereign House/ Site3 On Kettlestring Lane, YO30 4XA - Pre-Planning
Sewerage-Enquiry-Commercial On |
|T614075 |
>-----|
```

Hi Chris,

With regards to the above development I wanted to confirm the surface water discharge rates for the sites.

In order to do so I have attached our existing catchment drawings.

Kettlestring Lane has total impermeable area of 1.08ha of this area 0.31ha is to continue draining as existing with no works to be carried out to the building and associated hardstanding. This leaves 0.77ha, based on the modified rational method this gives a run-off rate of 107.8l/s to 3 separate outfalls, we are proposing to only utilise the northern and eastern outfalls with a total discharge rate of 67.6l/s. Providing a total betterment from the site of 37.3%

Former Sovereign House has total impermeable area of 0.27ha, we have calculated the discharge rate from this to be 37.8l/s with a 30% betterment we are proposing a discharge rate of 26.5l/s.

Seafire Close has a total impermeable area of 0.09ha, we have calculated the discharge rate from this to be 12.6l/s with a 30% betterment we are proposing a discharge rate of 8.8l/s

If you require any additional information please do not hesitate to contact me.

Regards
Stuart

-----Original Message-----

From: Chris.Roberts@yorkshirewater.co.uk
<Chris.Roberts@yorkshirewater.co.uk> On Behalf Of technical.sewerage@yorkshirewater.co.uk
Sent: 05 November 2019 15:56
To: Stuart Grayson <Stuart.Grayson@alanwood.co.uk>
Subject: Site1 On Seafire Close/ Site2 On Former Sovereign House/ Site3 On Kettlestring Lane, YO30 4XA - Pre-Planning Sewerage-Enquiry-Commercial On T614075

Dear Mr Grayson,

Please find my response below.

(See attached file: KETTLE.pdf)(See attached file: roberts4_radAD126.PDF)

Kind Regards

|-----+-----|

| (Embedded image moved |

|
| to file: pic04041.gif) |Chris Roberts

|
| |

| We are open Monday to |Sewerage Technical Team

| Friday |Developer Services

| 0800 – 1700 |

| We are closed Bank |Tel: 0345 1 20 84 82

| Holidays and Weekends |

|
|-----+-----|

*** Please note, all correspondence must be sent to technical.sewerage@yorkshirewater.co.uk and will be responded to within 10 working days ***

Do you know you can now apply and pay your application fees on line ? We are working hard to continually develop and improve your customer experience, for more information and applications please follow this

link <https://www.yorkshirewater.com/developers/apply-online/>

|----->
| From: |
|----->
>-----|

|Stuart Grayson <Stuart.Grayson@alanwood.co.uk>
|
>-----|
|----->
| To: |
|----->
>-----|

|Technical Sewerage@NotesMail
|
>-----|
|----->
| Date: |
|----->
>-----|

|21/10/2019 16:28
|
>-----|
|----->
| Subject: |
|----->
>-----|

|FW: YO 01061 PPE
|
>-----|

EXTERNAL SOURCE - THINK BEFORE YOU CLICK

Dear Sir/Madame

Please find attached a Pre-planning enquiry.

Regards

.

Stuart Grayson

.

T: 01904 611594

.

For and on behalf of Alan Wood & Partners

• YORK • HULL • LINCOLN • LONDON • SCARBOROUGH • SHEFFIELD •

• Omega 2 • Monks Cross Drive • York • YO32 9GZ •

[IMAGE]

Alan Wood & Partners is the
trading name of Alan Wood

Partnership Ltd.

Registered in England No. 1988349. Registered/Head Office: 341 Beverley Road, Hull, HU5 1LD

[IMAGE]

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(See attached file: image003.png)(See attached file: image004.png)(See attached file: Y000072 - 2019-10-18-YW Sewerage Enq_YO 01061.pdf)(See attached file: PPE.zip)

Yorkshire Water customers can get in touch for free with us via live chat or by requesting a free call back at <https://www.yorkshirewater.com>

Save money on your utility bills and help conserve water by requesting a free water saving pack <https://www.yorkshirewater.com/savewater>

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Yorkshire Water Services Limited

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(See attached file: IPIF-AWP-ZZ-XX-DR-C-0021 - Existing Impermeable Areas Seafire Close.pdf)(Embedded image moved to file: pic32662.jpg) -

IPIF-AWP-ZZ-XX-DR-C-0021 - Existing Impermeable Areas Seafire Close.pdf(See attached file: IPIF-AWP-ZZ-XX-DR-C-0020 - Existing Impermeable Areas Former Sovereign House.pdf)



YorkshireWater

An off-site foul and surface water sewer may be required which may be provided by the developer and considered for adoption under Section 104 of the Water Industry Act 1991. Please telephone 0345 120 84 82 for advice on sewer adoptions. Alternatively, the developer may in certain circumstances be able to requisition off-site sewers under Section 98 of the Water Industry Act 1991 for which an application must be made in writing. For further information, please telephone 0345 120 84 82.

Any new connection to an existing public sewer will require the prior approval of Yorkshire Water. You may apply on line or obtain an application form from our website (www.yorkshirewater.com) or by telephoning 0345 120 84 82.

Yorkshire Water's Trade Effluent team must be consulted in respect of any proposed trade effluent discharge to the public sewer.

All the above comments are based upon the information and records available at the present time and is subject to formal planning approval agreement. The information contained in this letter together with that shown on any extract from the Statutory Sewer Map that may be enclosed is believed to be correct and is supplied in good faith. Please note that capacity in the public sewer network is not reserved for specific future development. It is used up on a 'first come, first served' basis. You should visit the site and establish the line and level of any public sewers affecting your proposals before the commencement of any design work.

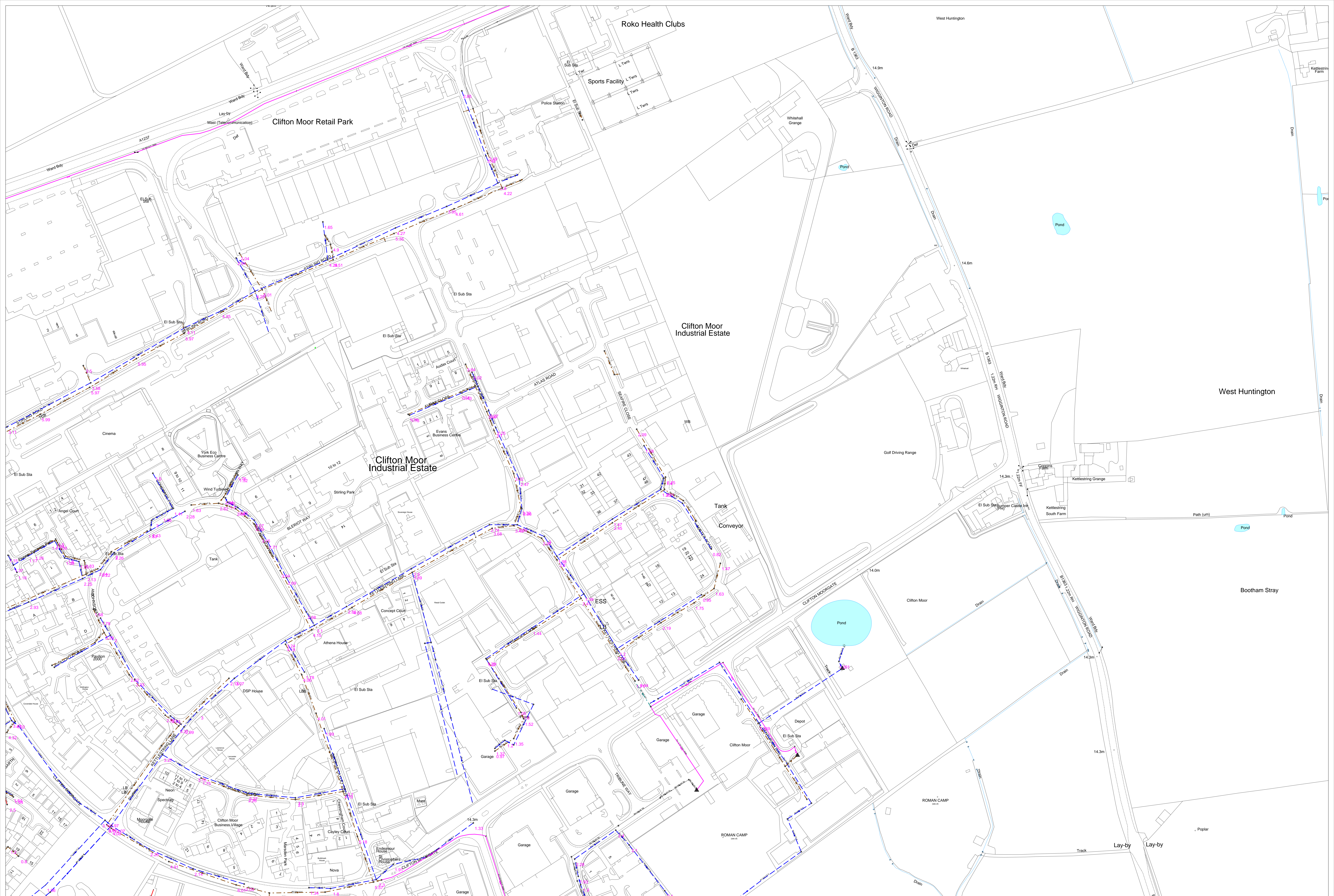
Yours sincerely



YorkshireWater


We are open Monday to Friday
0800 – 1700
We are closed Bank Holidays and
Weekends

Chris Roberts
Sewerage Technical Team
Developer Services
Tel: 0345 1 20 84 82



APPENDIX F

Surface Water Drainage & Storage Calculations

Alan Wood & Partners		Page 1
341 Beverley Road Hull HU5 1LD	Former Sovereign House	
Date 12/12/2019 File Site 2 - 30yr.SRCX	Designed by AC Checked by CH	
Elstree Computing Ltd	Source Control 2019.1	

Summary of Results for 30 year Return Period

Half Drain Time : 27 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	13.769	0.319	0.0	15.9	0.0	15.9	34.8	O K
30 min Summer	13.817	0.367	0.0	17.2	0.0	17.2	40.0	O K
60 min Summer	13.835	0.385	0.0	17.6	0.0	17.6	42.0	O K
120 min Summer	13.809	0.359	0.0	17.0	0.0	17.0	39.2	O K
180 min Summer	13.772	0.322	0.0	16.0	0.0	16.0	35.2	O K
240 min Summer	13.738	0.288	0.0	15.0	0.0	15.0	31.5	O K
360 min Summer	13.686	0.236	0.0	13.3	0.0	13.3	25.7	O K
480 min Summer	13.649	0.199	0.0	12.0	0.0	12.0	21.7	O K
600 min Summer	13.623	0.173	0.0	11.0	0.0	11.0	18.9	O K
720 min Summer	13.604	0.154	0.0	10.2	0.0	10.2	16.9	O K
960 min Summer	13.583	0.133	0.0	8.5	0.0	8.5	14.5	O K
1440 min Summer	13.557	0.107	0.0	6.4	0.0	6.4	11.7	O K
2160 min Summer	13.536	0.086	0.0	4.8	0.0	4.8	9.4	O K
2880 min Summer	13.523	0.073	0.0	3.9	0.0	3.9	7.9	O K
4320 min Summer	13.505	0.055	0.0	2.9	0.0	2.9	6.0	O K
5760 min Summer	13.496	0.046	0.0	2.3	0.0	2.3	5.0	O K
7200 min Summer	13.491	0.041	0.0	1.9	0.0	1.9	4.5	O K
8640 min Summer	13.488	0.038	0.0	1.7	0.0	1.7	4.1	O K
10080 min Summer	13.485	0.035	0.0	1.5	0.0	1.5	3.8	O K
15 min Winter	13.810	0.360	0.0	17.0	0.0	17.0	39.4	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Overflow Volume (m ³)	Time-Peak (mins)
15 min Summer	72.014	0.0	43.3	0.0	16
30 min Summer	46.909	0.0	56.4	0.0	25
60 min Summer	29.238	0.0	70.3	0.0	42
120 min Summer	17.704	0.0	85.2	0.0	76
180 min Summer	13.070	0.0	94.4	0.0	108
240 min Summer	10.495	0.0	101.0	0.0	140
360 min Summer	7.666	0.0	110.7	0.0	200
480 min Summer	6.135	0.0	118.1	0.0	260
600 min Summer	5.158	0.0	124.1	0.0	320
720 min Summer	4.475	0.0	129.2	0.0	376
960 min Summer	3.575	0.0	137.6	0.0	498
1440 min Summer	2.602	0.0	150.3	0.0	736
2160 min Summer	1.892	0.0	163.8	0.0	1104
2880 min Summer	1.508	0.0	174.1	0.0	1468
4320 min Summer	1.094	0.0	189.5	0.0	2200
5760 min Summer	0.871	0.0	201.2	0.0	2920
7200 min Summer	0.729	0.0	210.6	0.0	3608
8640 min Summer	0.631	0.0	218.6	0.0	4400
10080 min Summer	0.558	0.0	225.6	0.0	5128
15 min Winter	72.014	0.0	48.5	0.0	16


Alan Wood & Partners		Page 2
341 Beverley Road Hull HU5 1LD		Former Sovereign House
Date 12/12/2019 File Site 2 - 30yr.SRCX		Designed by AC Checked by CH
Elstree Computing Ltd		Source Control 2019.1



Summary of Results for 30 year Return Period

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	13.862	0.412	0.0	18.3	0.0	18.3	45.0	O K
60 min Winter	13.872	0.422	0.0	18.6	0.0	18.6	46.1	O K
120 min Winter	13.823	0.373	0.0	17.4	0.0	17.4	40.8	O K
180 min Winter	13.768	0.318	0.0	15.9	0.0	15.9	34.8	O K
240 min Winter	13.722	0.272	0.0	14.5	0.0	14.5	29.7	O K
360 min Winter	13.655	0.205	0.0	12.2	0.0	12.2	22.4	O K
480 min Winter	13.614	0.164	0.0	10.6	0.0	10.6	18.0	O K
600 min Winter	13.592	0.142	0.0	9.3	0.0	9.3	15.6	O K
720 min Winter	13.578	0.128	0.0	8.2	0.0	8.2	14.0	O K
960 min Winter	13.559	0.109	0.0	6.6	0.0	6.6	11.9	O K
1440 min Winter	13.537	0.087	0.0	4.9	0.0	4.9	9.5	O K
2160 min Winter	13.517	0.067	0.0	3.6	0.0	3.6	7.3	O K
2880 min Winter	13.505	0.055	0.0	2.9	0.0	2.9	6.0	O K
4320 min Winter	13.493	0.043	0.0	2.1	0.0	2.1	4.7	O K
5760 min Winter	13.488	0.038	0.0	1.7	0.0	1.7	4.1	O K
7200 min Winter	13.483	0.033	0.0	1.4	0.0	1.4	3.6	O K
8640 min Winter	13.479	0.029	0.0	1.2	0.0	1.2	3.1	O K
10080 min Winter	13.475	0.025	0.0	1.1	0.0	1.1	2.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
30 min Winter	46.909	0.0	63.2	0.0	26
60 min Winter	29.238	0.0	78.8	0.0	44
120 min Winter	17.704	0.0	95.4	0.0	80
180 min Winter	13.070	0.0	105.7	0.0	114
240 min Winter	10.495	0.0	113.2	0.0	146
360 min Winter	7.666	0.0	124.0	0.0	206
480 min Winter	6.135	0.0	132.3	0.0	264
600 min Winter	5.158	0.0	139.0	0.0	320
720 min Winter	4.475	0.0	144.8	0.0	382
960 min Winter	3.575	0.0	154.2	0.0	502
1440 min Winter	2.602	0.0	168.3	0.0	746
2160 min Winter	1.892	0.0	183.5	0.0	1104
2880 min Winter	1.508	0.0	195.1	0.0	1468
4320 min Winter	1.094	0.0	212.3	0.0	2192
5760 min Winter	0.871	0.0	225.4	0.0	2912
7200 min Winter	0.729	0.0	235.9	0.0	3584
8640 min Winter	0.631	0.0	244.9	0.0	4384
10080 min Winter	0.558	0.0	252.7	0.0	4960

Alan Wood & Partners		Page 3
341 Beverley Road Hull HU5 1LD	Former Sovereign House	
Date 12/12/2019 File Site 2 - 30yr.SRCX	Designed by AC Checked by CH	
Elstree Computing Ltd	Source Control 2019.1	


Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+0

Time Area Diagram

Total Area (ha) 0.321

Time (mins)		Area
From:	To:	(ha)
0	4	0.321

Alan Wood & Partners		Page 4
341 Beverley Road Hull HU5 1LD	Former Sovereign House	
Date 12/12/2019 File Site 2 - 30yr.SRCX	Designed by AC Checked by CH	
Elstree Computing Ltd	Source Control 2019.1	

Model Details

Storage is Online Cover Level (m) 14.900

Cellular Storage Structure

Invert Level (m) 13.450 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	115.0	0.0	0.801	0.0	0.0
0.800	115.0	0.0			

Orifice Outflow Control

Diameter (m) 0.120 Discharge Coefficient 0.600 Invert Level (m) 13.430

Weir Overflow Control

Discharge Coef 0.544 Width (m) 0.500 Invert Level (m) 14.900

Alan Wood & Partners		Page 1
341 Beverley Road Hull HU5 1LD		Former Sovereign House
Date 12/12/2019 File Site 2 - 100yr + 30% CC...		Designed by AC Checked by CH
Elstree Computing Ltd		Source Control 2019.1



Summary of Results for 100 year Return Period (+30%)

Half Drain Time : 38 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	14.005	0.555	0.0	21.6	0.0	21.6	60.7	O K
30 min Summer	14.101	0.651	0.0	23.5	0.0	23.5	71.1	O K
60 min Summer	14.145	0.695	0.0	24.3	0.0	24.3	75.9	O K
120 min Summer	14.118	0.668	0.0	23.8	0.0	23.8	72.9	O K
180 min Summer	14.060	0.610	0.0	22.7	0.0	22.7	66.7	O K
240 min Summer	14.003	0.553	0.0	21.5	0.0	21.5	60.4	O K
360 min Summer	13.906	0.456	0.0	19.4	0.0	19.4	49.8	O K
480 min Summer	13.835	0.385	0.0	17.6	0.0	17.6	42.0	O K
600 min Summer	13.781	0.331	0.0	16.2	0.0	16.2	36.1	O K
720 min Summer	13.738	0.288	0.0	15.0	0.0	15.0	31.5	O K
960 min Summer	13.678	0.228	0.0	13.0	0.0	13.0	24.9	O K
1440 min Summer	13.612	0.162	0.0	10.5	0.0	10.5	17.7	O K
2160 min Summer	13.576	0.126	0.0	8.0	0.0	8.0	13.7	O K
2880 min Summer	13.556	0.106	0.0	6.4	0.0	6.4	11.6	O K
4320 min Summer	13.534	0.084	0.0	4.7	0.0	4.7	9.1	O K
5760 min Summer	13.519	0.069	0.0	3.7	0.0	3.7	7.6	O K
7200 min Summer	13.509	0.059	0.0	3.1	0.0	3.1	6.4	O K
8640 min Summer	13.501	0.051	0.0	2.7	0.0	2.7	5.6	O K
10080 min Summer	13.497	0.047	0.0	2.3	0.0	2.3	5.1	O K
15 min Winter	14.077	0.627	0.0	23.0	0.0	23.0	68.5	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
15 min Summer	121.269	0.0	72.9	0.0	16
30 min Summer	79.695	0.0	95.9	0.0	27
60 min Summer	49.937	0.0	120.2	0.0	44
120 min Summer	30.267	0.0	145.7	0.0	78
180 min Summer	22.297	0.0	161.0	0.0	110
240 min Summer	17.851	0.0	171.9	0.0	144
360 min Summer	12.957	0.0	187.1	0.0	206
480 min Summer	10.330	0.0	198.9	0.0	268
600 min Summer	8.659	0.0	208.4	0.0	328
720 min Summer	7.492	0.0	216.4	0.0	388
960 min Summer	5.959	0.0	229.5	0.0	508
1440 min Summer	4.309	0.0	248.9	0.0	738
2160 min Summer	3.110	0.0	269.5	0.0	1100
2880 min Summer	2.466	0.0	284.9	0.0	1468
4320 min Summer	1.775	0.0	307.6	0.0	2196
5760 min Summer	1.405	0.0	324.5	0.0	2936
7200 min Summer	1.171	0.0	338.1	0.0	3672
8640 min Summer	1.008	0.0	349.5	0.0	4360
10080 min Summer	0.889	0.0	359.4	0.0	5040
15 min Winter	121.269	0.0	81.7	0.0	16


Alan Wood & Partners		Page 2
341 Beverley Road Hull HU5 1LD		Former Sovereign House
Date 12/12/2019 File Site 2 - 100yr + 30% CC...		Designed by AC Checked by CH
Elstree Computing Ltd		Source Control 2019.1



Summary of Results for 100 year Return Period (+30%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	14.188	0.738	0.0	25.1	0.0	25.1	80.6	O K
60 min Winter	14.227	0.777	0.0	25.8	0.0	25.8	84.9	O K
120 min Winter	14.167	0.717	0.0	24.7	0.0	24.7	78.4	O K
180 min Winter	14.079	0.629	0.0	23.1	0.0	23.1	68.7	O K
240 min Winter	13.997	0.547	0.0	21.4	0.0	21.4	59.8	O K
360 min Winter	13.869	0.419	0.0	18.5	0.0	18.5	45.8	O K
480 min Winter	13.782	0.332	0.0	16.2	0.0	16.2	36.3	O K
600 min Winter	13.721	0.271	0.0	14.4	0.0	14.4	29.6	O K
720 min Winter	13.676	0.226	0.0	13.0	0.0	13.0	24.7	O K
960 min Winter	13.620	0.170	0.0	10.8	0.0	10.8	18.5	O K
1440 min Winter	13.577	0.127	0.0	8.1	0.0	8.1	13.9	O K
2160 min Winter	13.549	0.099	0.0	5.8	0.0	5.8	10.9	O K
2880 min Winter	13.534	0.084	0.0	4.7	0.0	4.7	9.2	O K
4320 min Winter	13.514	0.064	0.0	3.4	0.0	3.4	6.9	O K
5760 min Winter	13.501	0.051	0.0	2.7	0.0	2.7	5.6	O K
7200 min Winter	13.495	0.045	0.0	2.2	0.0	2.2	4.9	O K
8640 min Winter	13.491	0.041	0.0	1.9	0.0	1.9	4.5	O K
10080 min Winter	13.488	0.038	0.0	1.7	0.0	1.7	4.2	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
30 min Winter	79.695	0.0	107.4	0.0	29
60 min Winter	49.937	0.0	134.6	0.0	46
120 min Winter	30.267	0.0	163.2	0.0	84
180 min Winter	22.297	0.0	180.3	0.0	118
240 min Winter	17.851	0.0	192.5	0.0	152
360 min Winter	12.957	0.0	209.6	0.0	216
480 min Winter	10.330	0.0	222.8	0.0	276
600 min Winter	8.659	0.0	233.4	0.0	336
720 min Winter	7.492	0.0	242.4	0.0	396
960 min Winter	5.959	0.0	257.0	0.0	510
1440 min Winter	4.309	0.0	278.8	0.0	738
2160 min Winter	3.110	0.0	301.9	0.0	1104
2880 min Winter	2.466	0.0	319.1	0.0	1468
4320 min Winter	1.775	0.0	344.6	0.0	2200
5760 min Winter	1.405	0.0	363.5	0.0	2936
7200 min Winter	1.171	0.0	378.7	0.0	3656
8640 min Winter	1.008	0.0	391.5	0.0	4312
10080 min Winter	0.889	0.0	402.5	0.0	5128

Alan Wood & Partners		Page 3
341 Beverley Road Hull HU5 1LD	Former Sovereign House	
Date 12/12/2019 File Site 2 - 100yr + 30% CC...	Designed by AC Checked by CH	
Elstree Computing Ltd	Source Control 2019.1	


Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.400	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time Area Diagram

Total Area (ha) 0.321

Time (mins) Area		
From:	To:	(ha)
0	4	0.321

Alan Wood & Partners		Page 4
341 Beverley Road Hull HU5 1LD	Former Sovereign House	
Date 12/12/2019 File Site 2 - 100yr + 30% CC...	Designed by AC Checked by CH	
Elstree Computing Ltd	Source Control 2019.1	

Model Details

Storage is Online Cover Level (m) 14.900

Cellular Storage Structure

Invert Level (m) 13.450 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	115.0	0.0	0.801	0.0	0.0
0.800	115.0	0.0			

Orifice Outflow Control

Diameter (m) 0.120 Discharge Coefficient 0.600 Invert Level (m) 13.430

Weir Overflow Control

Discharge Coef 0.544 Width (m) 0.500 Invert Level (m) 14.900

APPENDIX G

Proposed Drainage Layout & Details

THE VERSIONS OF BRITISH STANDARDS AND OTHER PUBLICATIONS LISTED ABOVE ARE CURRENT AT THE TIME OF THE DRAWING ISSUE. HOWEVER IF THESE HAVE BEEN REVISED OR UPDATED THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING THAT ANY DISCREPANCIES SHOULD BE NOTIFIED TO AWP IMMEDIATELY.

NOTES:

- THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS. WHERE CONFLICT OF REQUIREMENTS EXIST THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATION. OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERING AND ARCHITECT'S DRAWINGS.
- DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE COMPLETION OF THE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THAT THE BUILDING AND ITS COMPONENTS ARE SAFELY ERECTED. THIS INCLUDES THE NECESSARY SUPPORTS AND BRACING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE NECESSARY SUCH MATERIAL REMAINING THE PROPERTY OF THE CONTRACTOR ON COMPLETION AND FOR ENSURING THAT THE WORKS AND ANY ADJACENT PROPERTIES ARE SAFE IN THE TEMPORARY CONDITION.

DRAINAGE

- DRAINAGE SYSTEMS TO COMPLY WITH THE FOLLOWING STANDARDS:
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NOTES:

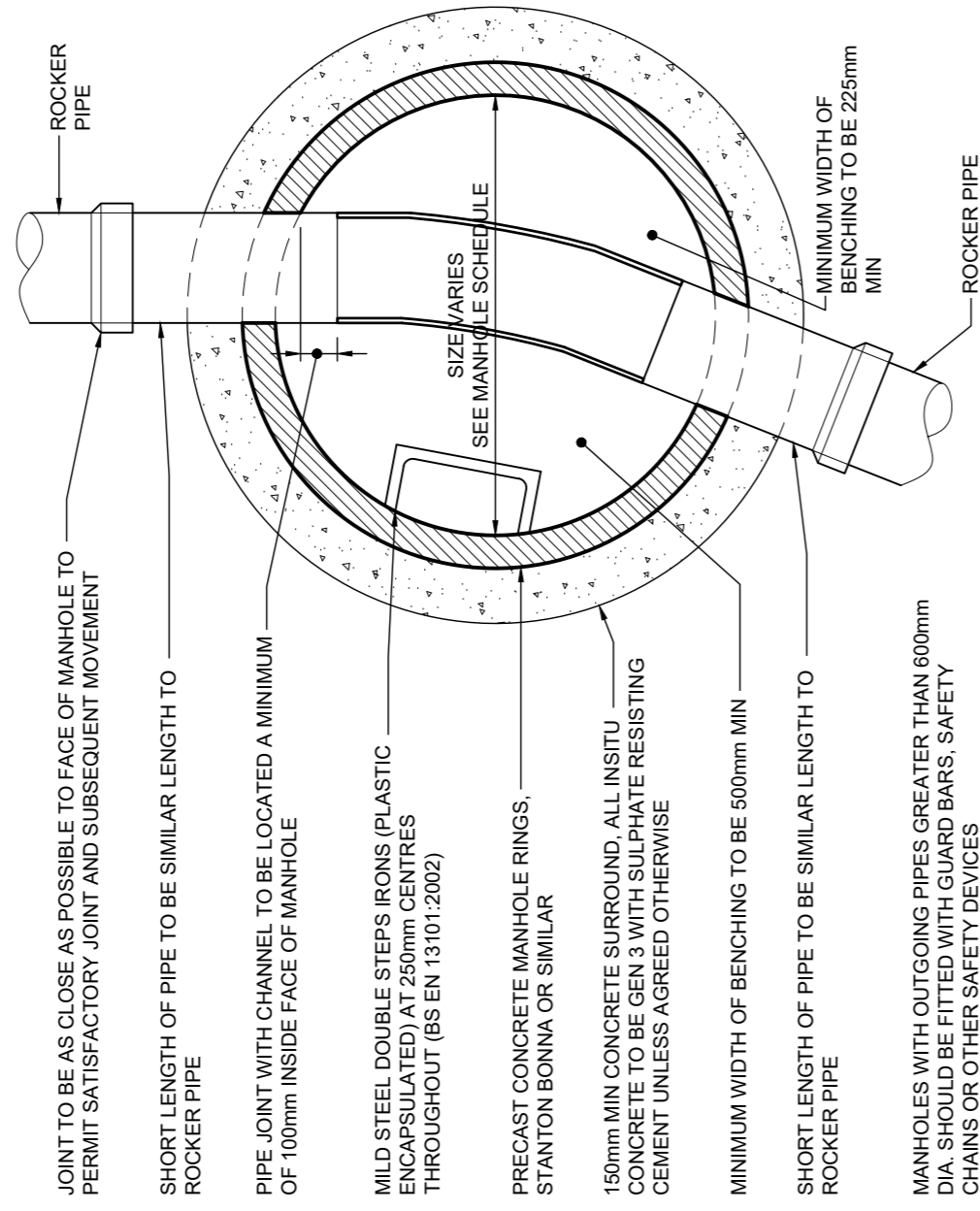
1. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS WHERE CONFLICT OF REQUIREMENTS EXIST. THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATION, OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
3. DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT THE STRUCTURE IS FULLY COMPLETED AND STABLE BEFORE THE BUILDING AND THE COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHAT-EVER TEMPORARY BRACING, GUYS OR TIE-DOWNS WHICH MAY BE NECESSARY, SUCH MATERIAL REMAINING THE PROPERTY OF THE CONTRACTOR ON COMPLETION OF THE WORK AND ANY ADJACENT PROPERTIES ARE SAFE IN THE TEMPORARY CONDITION.

DRAINAGE

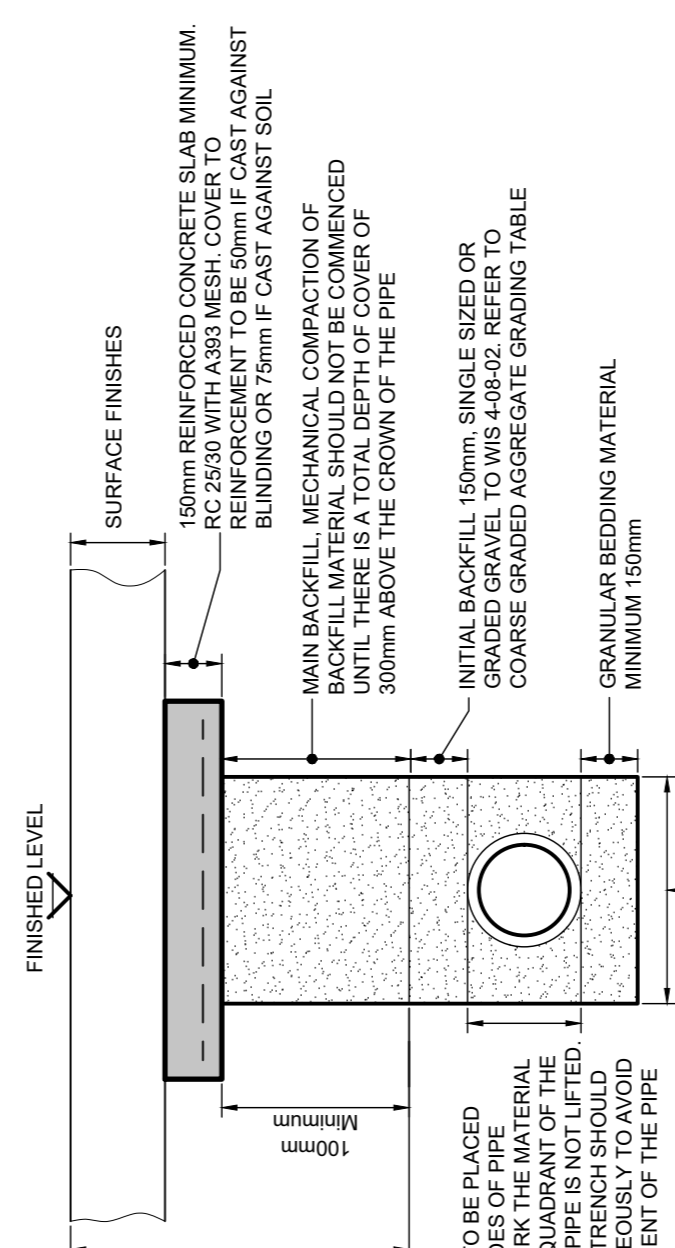
5. FOR DRAINAGE NOTES REFER TO DRAWING GROVE-AWP-ZZ-XX-DR-C-0010.

Manhole Depth (To Soffit)	Diameter of largest pipe in manhole (mm)	Internal diameter of manhole (mm)	Minimum Clear opening size
Less than 1500	150	1350	1200x675mm
	300	1500	1200x675mm
	450	1500	1200x675mm
	700	1500	1200x675mm
	900	1800	1200x675mm
	1000	2100	1200x675mm
Greater than 1500	Greater than 1000	Refer to schedules	1200x675mm
	100 - 450	1200	600x600
	Greater than 450	Larger of 1800 or (DN+775)	600x600
	Greater than 1000	Refer to schedules	600x600
Manholes Shaft Greater than 3000 to soffit of pipe	STEPS LADDERS	1200	600x600

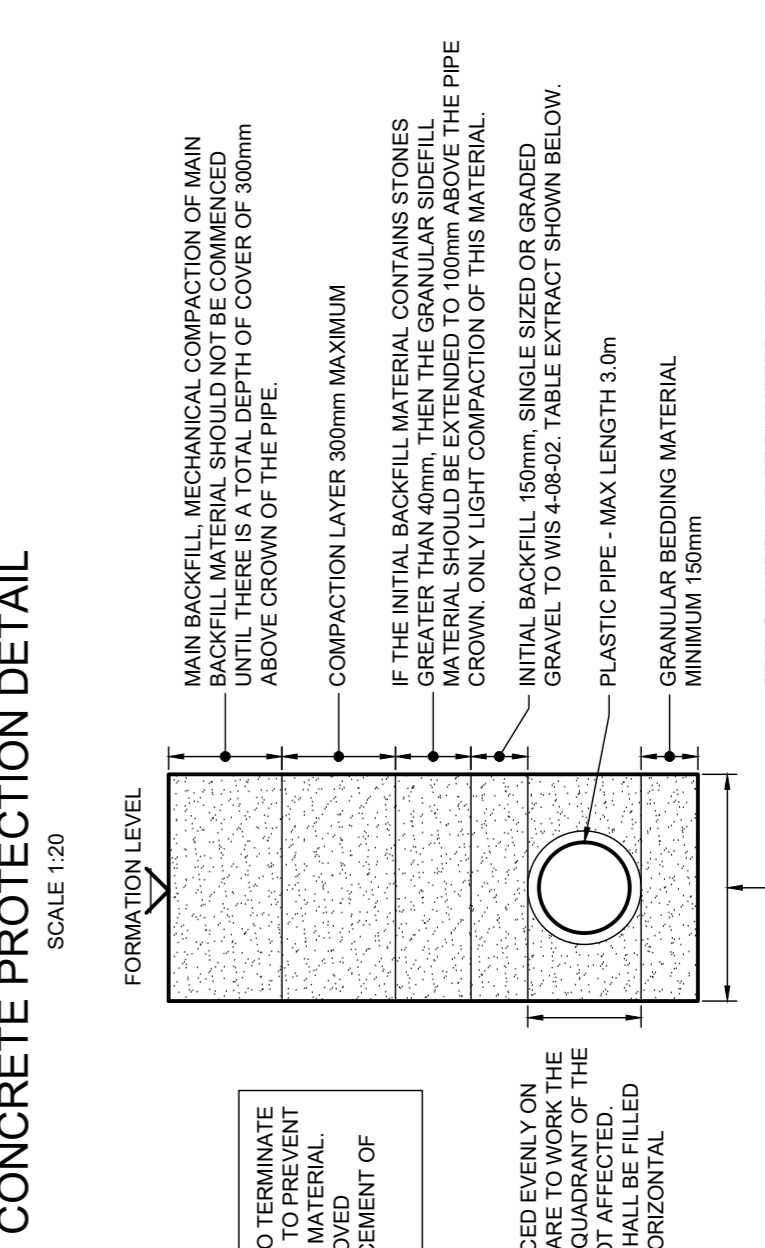
TABLE APPLICABLE TO MANHOLE TYPES A AND B
CHAMBER SIZES ARE MINIMUM REQUIRED.



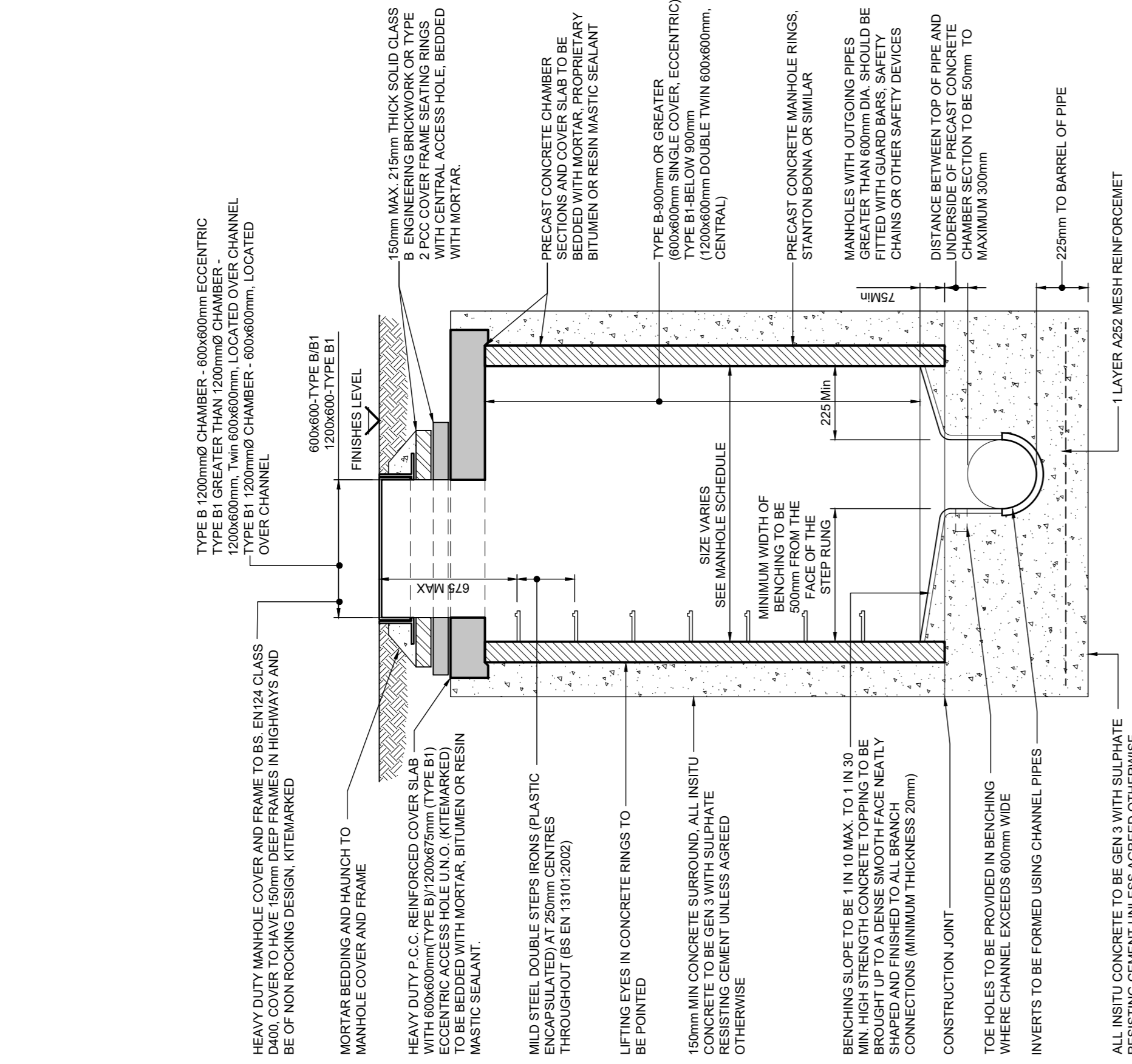
ROCKER PIPE LENGTH	NOMINAL PIPE LENGTH
EFFECTIVE LENGTH (mm)	150
150	150
801-750	1.00
>750	1.25



CONCRETE PROTECTION DETAIL
SCALE 1:20



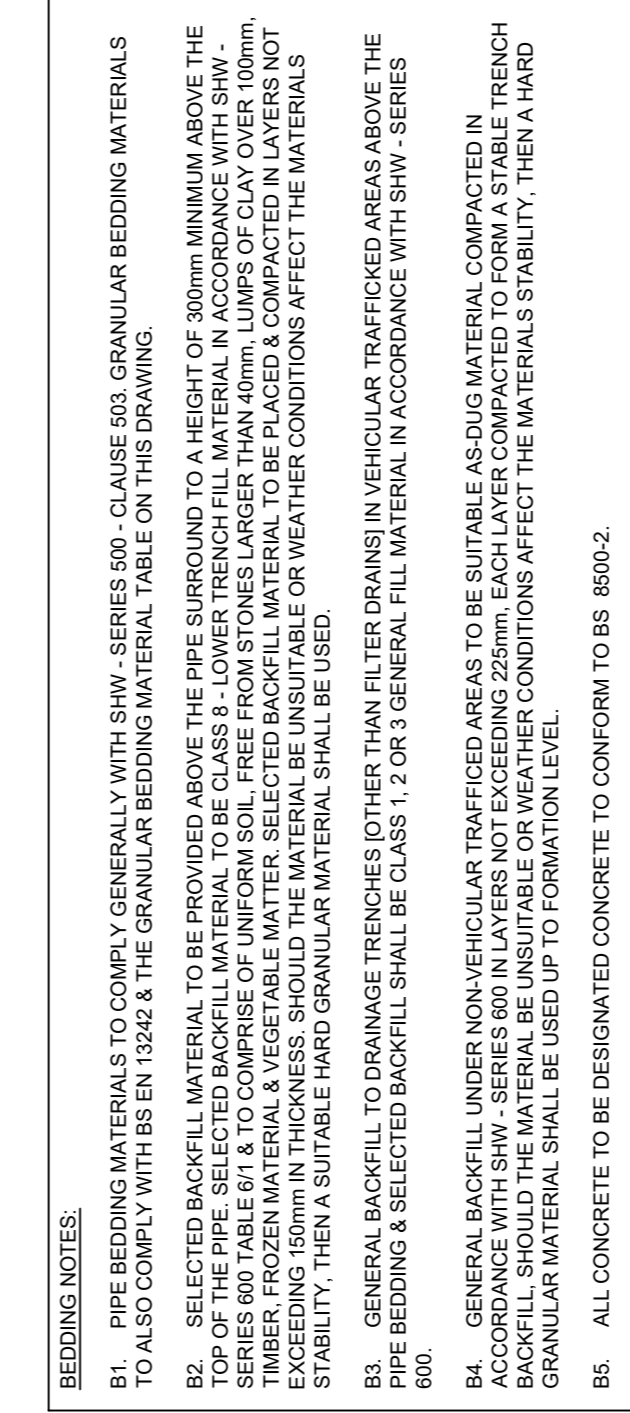
TYPICAL DETAIL THROUGH BEDDING TO STRUCTURED WALL SEWER PIPE TO WIS
4-35-01



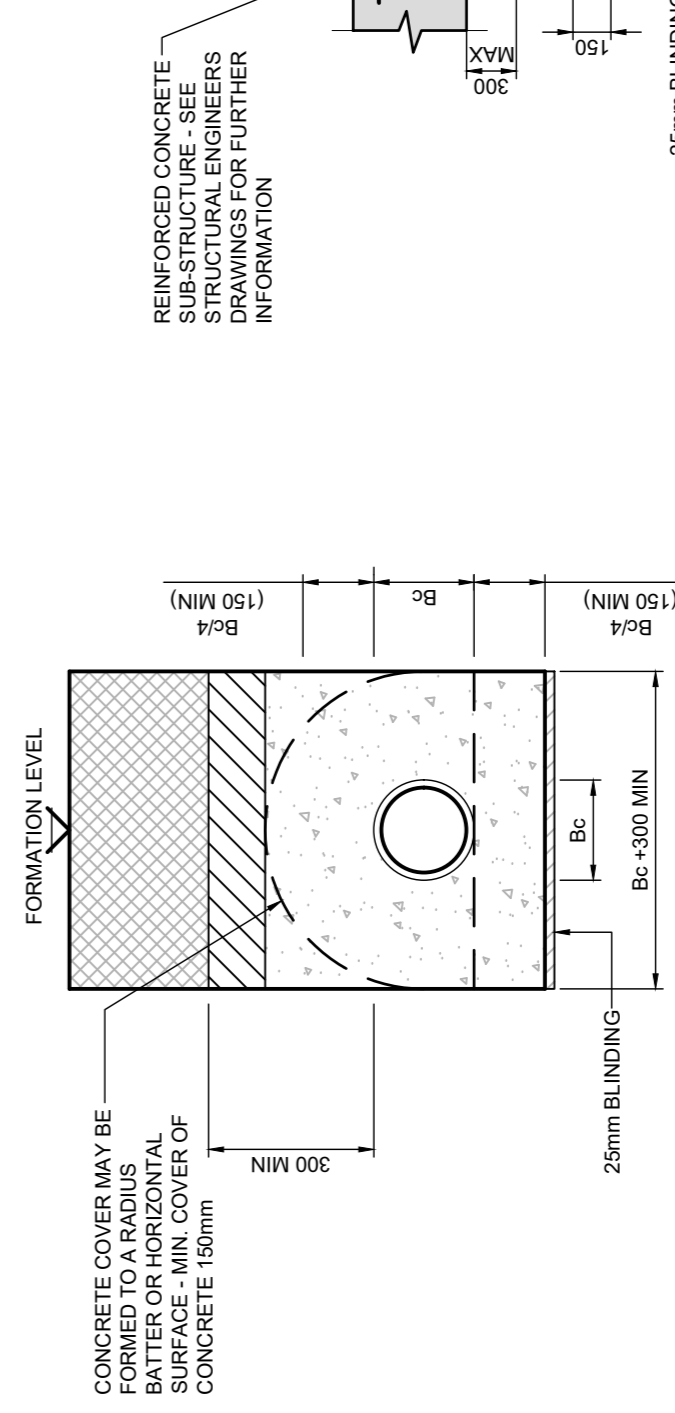
SECTION MANHOLE TYPE B
MANHOLE COVER TO BE 150mm SOFFIT
MANHOLE TYPE B1 DEPTH 1.15m SOFFIT
SCALE 1:20

4/20 COARSE GRADED AGGREGATE GRADING TABLE	PERCENTAGE PASSING (%)
40	100
31.5	98 - 100
20	90 - 99
10	25 - 70
2	0 - 5

TABLE 2: 4/20 COARSE GRADED AGGREGATE GRADING TABLE



PIPE BEDDING DETAIL KEY



CLASS S BEDDING DETAIL
SCALE 1:20

CLASS Z CONCRETE BEDDING DETAIL
(EXTERNALLY AS PER NOTE 16 OF DRAINAGE NOTES)
SCALE 1:20

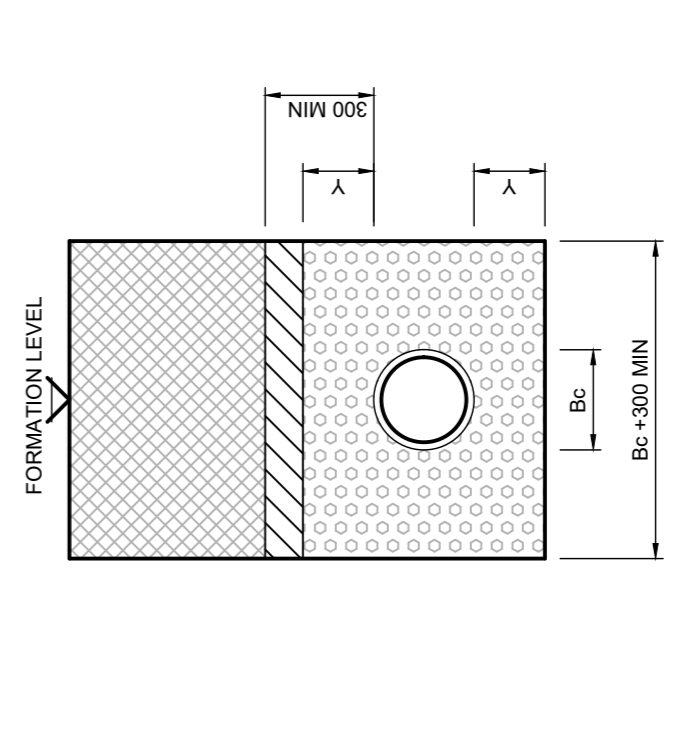
NOMINAL PIPE DIA (mm)	SINGLE SIZED (mm)	GRADED (mm)
100	10	N/A
OVER 100 TO 150	10 OR 14	14 TO 5
OVER 150 TO 300	10, 14 OR 20	14 TO 5 OR 20 TO 5
OVER 300 TO 450	10, 14 OR 20	14 TO 5 OR 20 TO 5
GREATER THAN 450	14, 20 OR 40	14 TO 5 OR 20 TO 5 OR 40 TO 5

GRANULAR BEDDING MATERIAL TABLE
(ALL AGGREGATES TO BS EN 12422, PD 6852-6:2003 & BS EN 13065-2)
100mm at A1

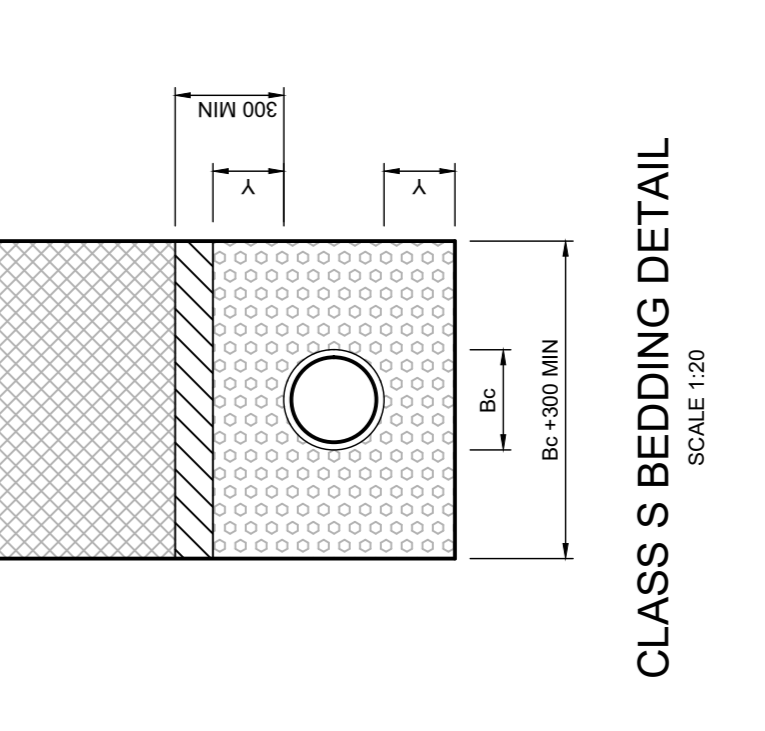
CLASS Y BEDDING REINFORCEMENT DETAIL
SCALE 1:20



TYPICAL DETAIL THROUGH BEDDING TO STRUCTURED WALL SEWER PIPE TO WIS
4-35-01



CONCRETE PROTECTION DETAIL
SCALE 1:20



TYPICAL DETAIL THROUGH BEDDING TO STRUCTURED WALL SEWER PIPE TO WIS
4-35-01

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T. 02071 880781
T. 01723 855984
T. 01135 311068

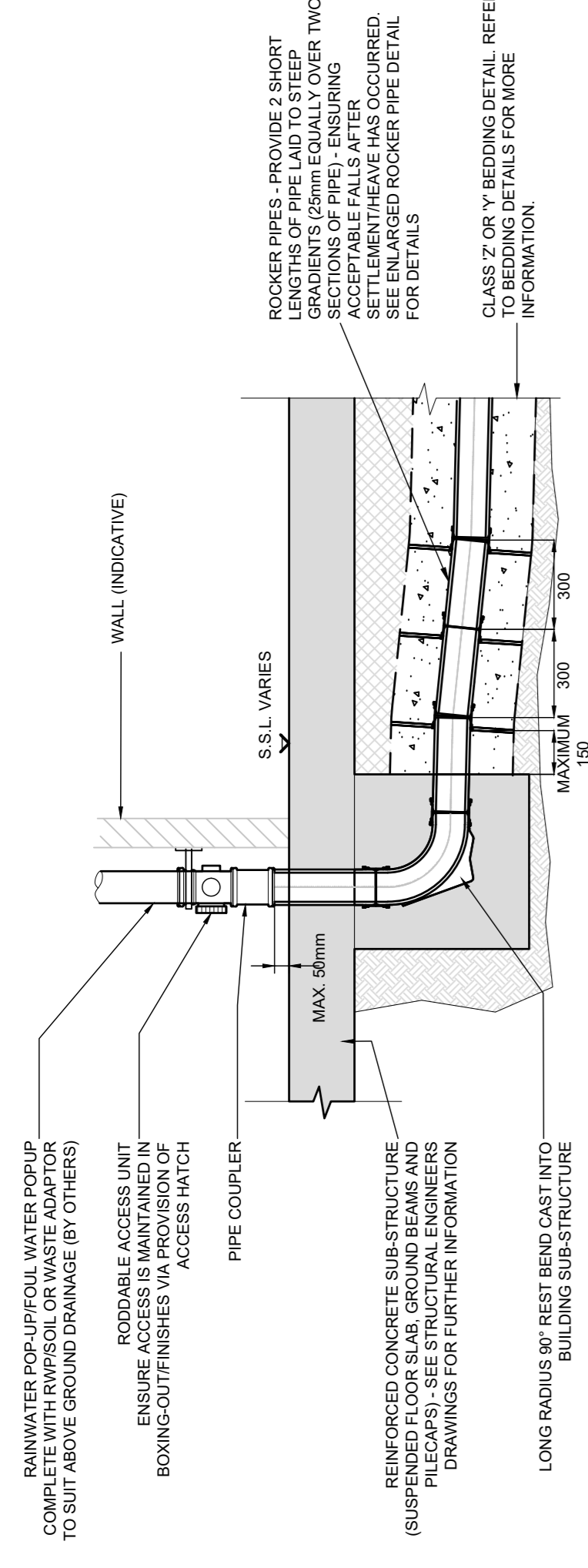
Project: **PROPOSED DEVELOPMENT AT CLIFTON MOOR INDUSTRIAL ESTATE, YORK**
Client: **IPIF YORK UNIT TRUST**
Drawing: **DRAINAGE DETAILS (SHEET 2)**
Role: **CIVIL ENGINEER**
Drawing Status: **TENDER**
Job no.: **43276** Scale@ A1: **AS NOTED** Rev: **T2**
Project Originator: **IPIF - AWP - ZZ - XX - DR - C - 0011**
Volume: **Level**
Type: **Rev**
Number: **12**

NOTES:

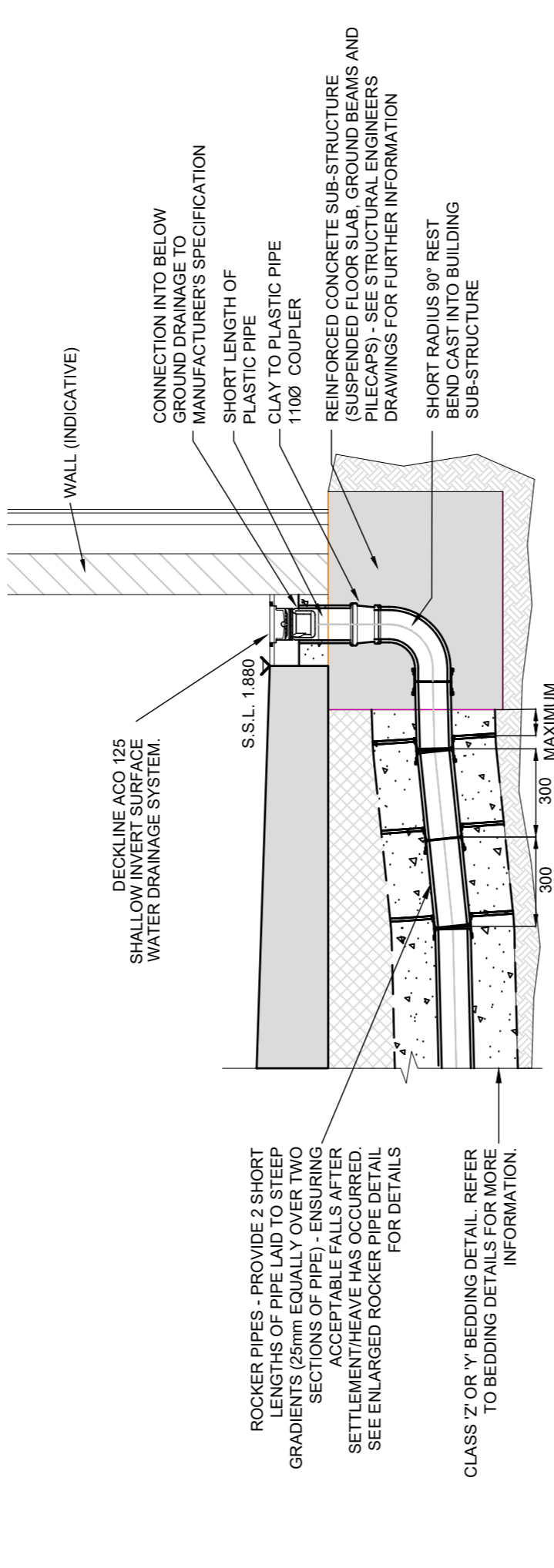
1. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS WHERE CONFLICT OF REQUIREMENTS EXIST. THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATION. OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
3. DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTICED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT THE STRUCTURE IS FULLY COMPLETED AND STABLE BEFORE THE BUILDING AND THE COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS WHICH MAY BE NECESSARY. SUCH MATERIAL, REMAINING THE PROPERTY OF THE CONTRACTOR ON COMPLETION OF THE WORK AND ANY ADJACENT PROPERTIES ARE SAFE IN THE TEMPORARY CONDITION.

DRAINAGE

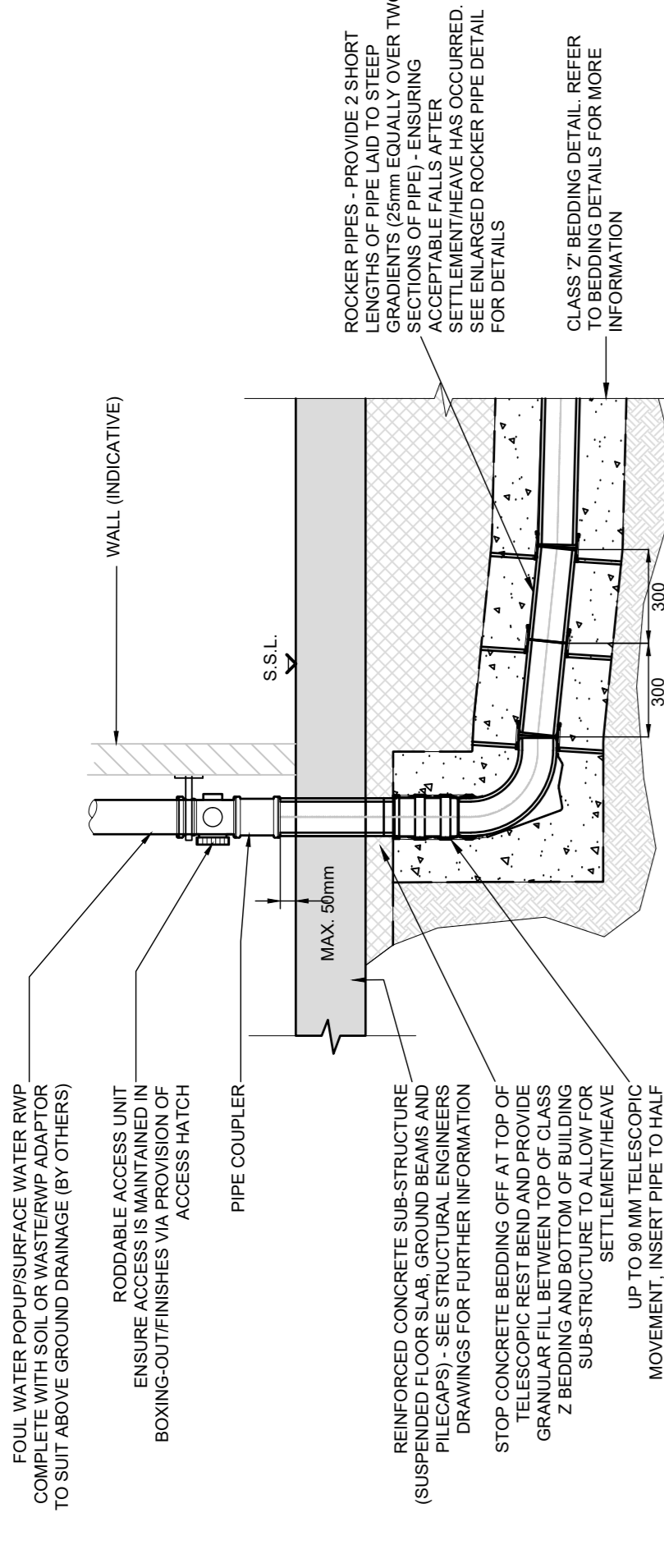
5. FOR DRAINAGE NOTES REFER TO DRAWING GROVE-AWP-ZZ-XX-DR-C-0010.



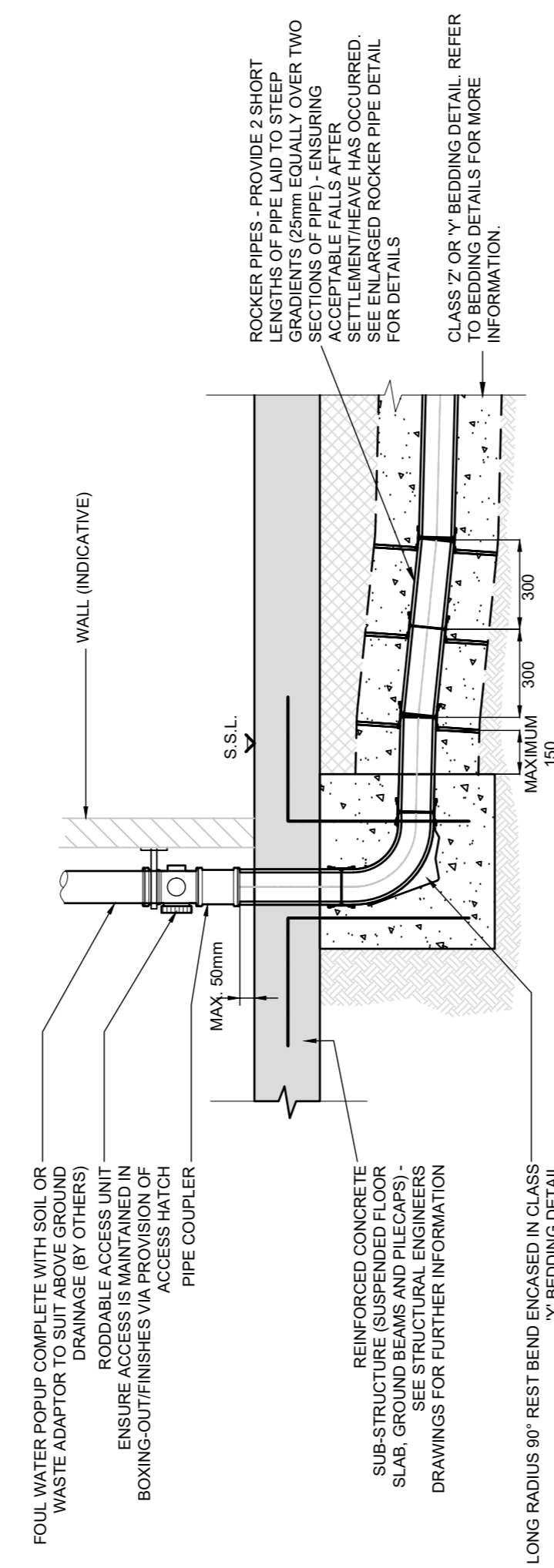
DRAINAGE STACK DETAIL 3 - REST BEND CAST INTO BUILDING SUB-STRUCTURE
(ALLOWANCE FOR HEAVE/SETTLEMENT OF DOWNSTREAM PIPEWORK)



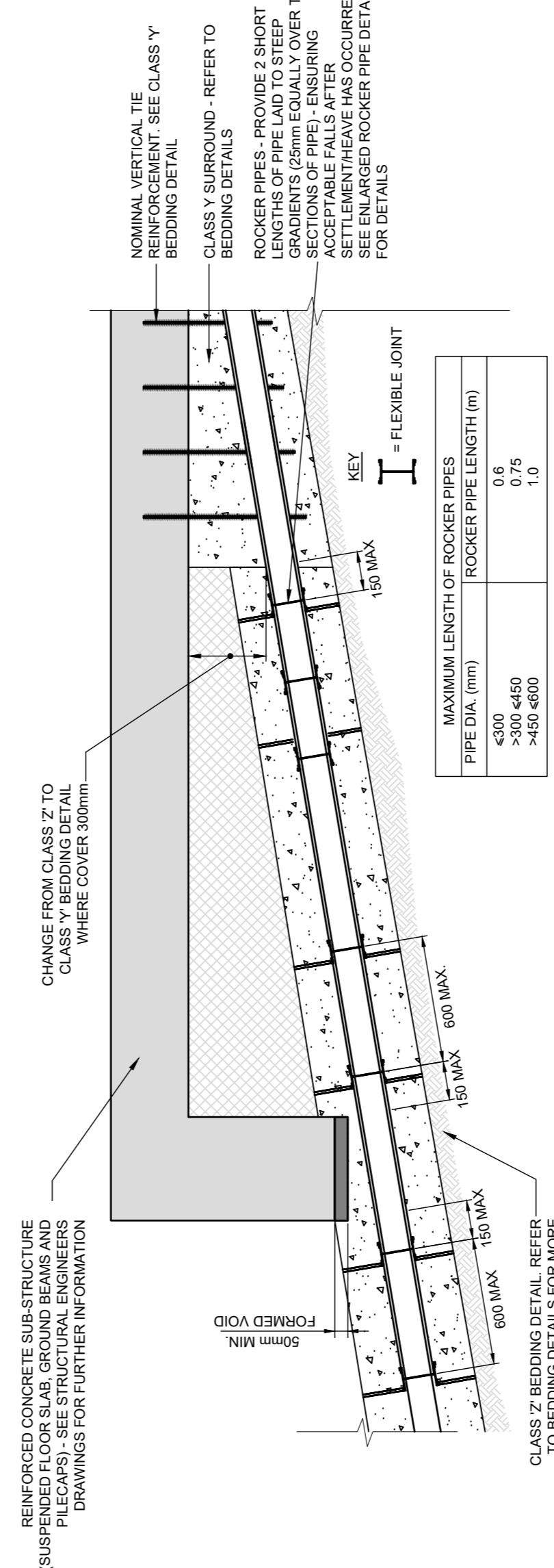
DRAINAGE STACK DETAIL 4 - REST BEND CAST INTO BUILDING SUB-STRUCTURE
(ALLOWANCE FOR HEAVE/SETTLEMENT OF DOWNSTREAM PIPEWORK)



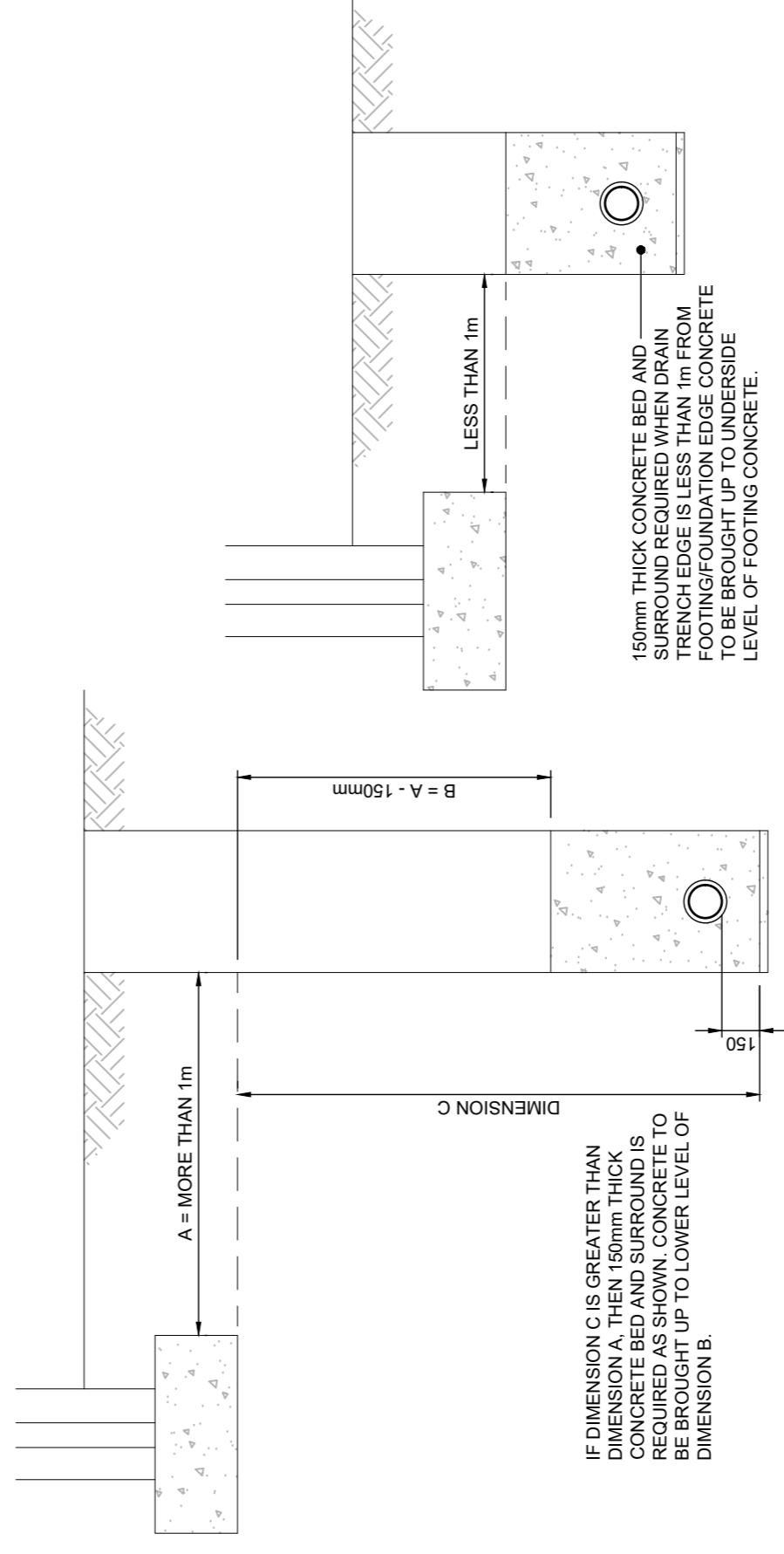
DRAINAGE STACK DETAIL 1 - TELESCOPIC REST BEND PROVIDED BENEATH BUILDING SUB-STRUCTURE (MINIMUM DEPTH REQUIRED FROM BOTTOM OF SUB-STRUCTURE TO INVERT 595mm FOR 100mmØ PIPEWORK, 685mm FOR 150mmØ PIPEWORK)
(ALLOWANCE FOR HEAVE/SETTLEMENT OF REST BEND AND DOWNSTREAM PIPEWORK)



DRAINAGE STACK DETAIL 2 - REST BEND PROVIDED BENEATH BUILDING SUB-STRUCTURE (INSUFFICIENT DEPTH FOR TELESCOPIC)
(ALLOWANCE FOR HEAVE/SETTLEMENT OF DOWNSTREAM PIPEWORK)



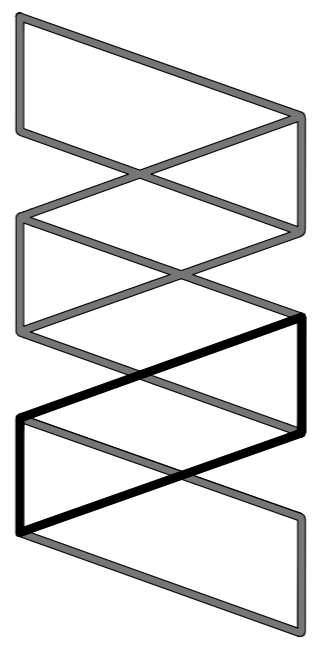
TYPICAL DRAINAGE BEDDING DETAIL UNDER BUILDING SUB-STRUCTURE
SCALE 1:20



DRAIN TRENCH EDGE MORE THAN 1m. FROM FOOTING/FOUNDATION EDGE

DRAIN TRENCH EDGE LESS THAN 1m. FROM FOOTING/FOUNDATION EDGE

Rev.	Description	Date	By	CHK.	App.
T2	TENDER ISSUE	23.04.20	TV	SPG	CH
T1	TENDER ISSUE	05.03.20	BI	BI	CH
P1	PRELIMINARY ISSUE	18.02.20	TV	SPG	CH



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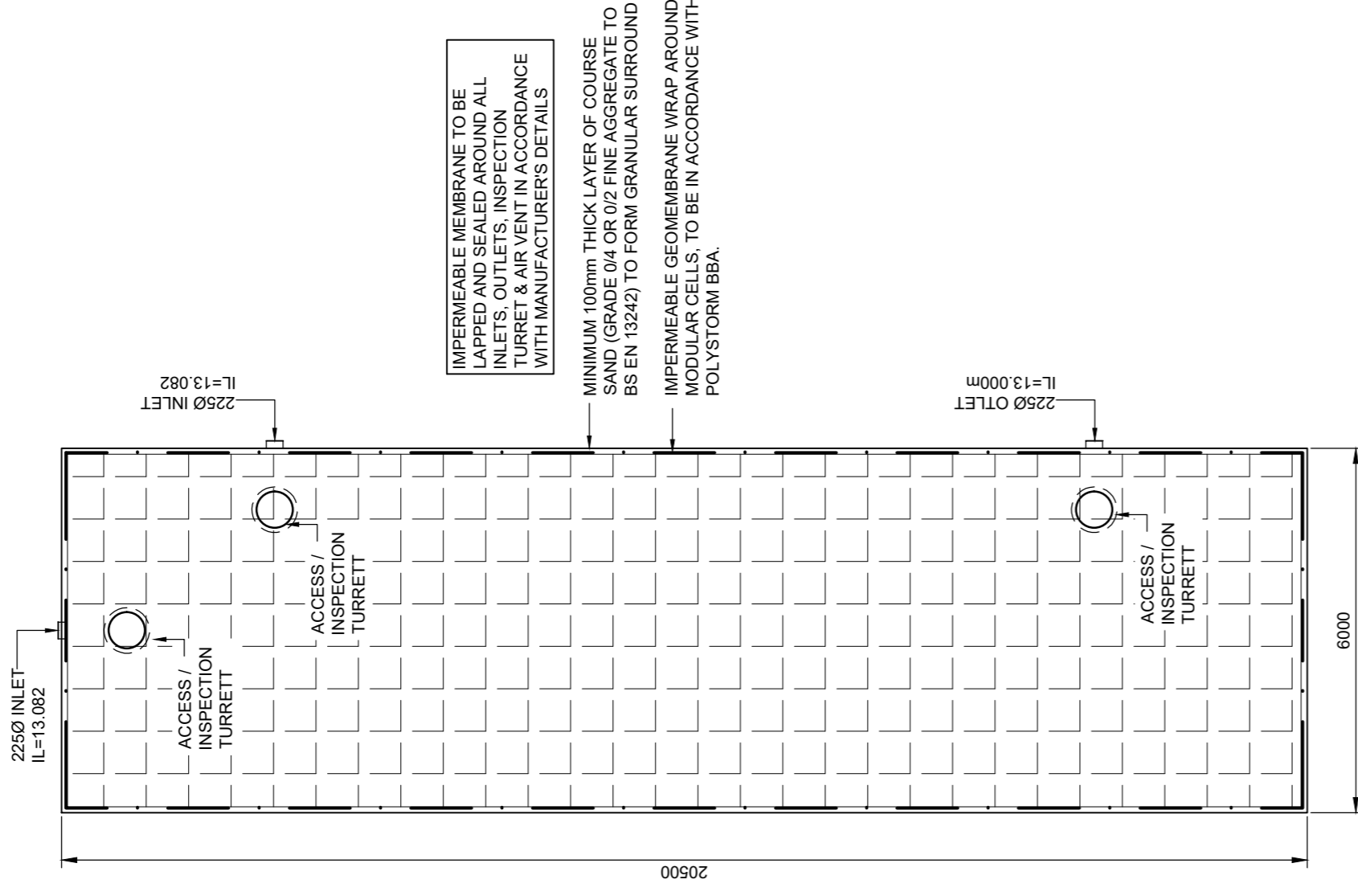
Project:	PROPOSED DEVELOPMENT AT CLIFTON MOOR INDUSTRIAL ESTATE, YORK
Client:	IPIF YORK UNIT TRUST
Drawing:	DRAINAGE DETAILS (SHEET 3)
Rev:	CIVIL ENGINEER
Drawing Status:	TENDER
Job no.:	43276
Project Originator:	IPIF - AWP - ZZ - XX - DR - C - 0012
Scale:	A1
Volume:	AS NOTED
Level:	Rev. T2
Type:	
Roll:	
Number:	

NOTES:

1. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS WHERE CONFLICT OF REQUIREMENTS EXIST. THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATION, OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
3. DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT THE STRUCTURE IS FULLY STABILISED BEFORE THE COMMENCEMENT OF BUILDING AND THE COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS WHICH MAY BE NECESSARY, SUCH MATERIAL REMAINING THE PROPERTY OF THE CONTRACTOR ON COMPLETION OF THE WORKS AND ANY ADJACENT PROPERTIES ARE SAFE IN THE TEMPORARY CONDITION.

DRAINAGE

5. FOR DRAINAGE NOTES REFER TO DRAWING IPE-AWP-ZZ-XX-DR-C-0501 TO 0503.



PLAN ON CELLULAR ATTENUATION TANK
- SOVEREIGN HOUSE SITE -
SCALE 1:100

PROPOSED ATTENUATION TANK DETAILS. (POLYSTORM-R PSM)a CELLULAR ATTENUATION SYSTEM WITH A VOIDS RATIO OF 95% (OR SIMILAR APPROVED SYSTEM)

- ATTENUATION VOLUME= 97.58m³
- ACTUAL ATTENUATION VOLUME =97.7 m³ (95% VOID RATIO)
- TOTAL NUMBER OF ATTENUATION CRATES = 485 LAYED IN TWO ROWS
- TOTAL HEIGHT OF THE ATTENUATION TANK = 0.8m
- TOTAL PROPOSED IMPERMEABLE AREA = 0.313ha

DESIGNED TO CONTAIN M100 + 30% AND AN OUTFLOW OF 26.5 L/S

PLEASE ENSURE THE ATTENUATION STRUCTURE CHOSEN IS COMPLIANT TO CR16 REPORT C080. LOADING CALCULATIONS ARE TO BE SUBMITTED PRIOR TO CONSTRUCTION.

GENERAL NOTES

WHERE VENT PIPES ARE REQUIRED PLEASE ENSURE THESE ARE DISCREET. PROPOSALS TO BE CONFIRMED WITH CLIENT PRIOR TO CONSTRUCTION PHASE.

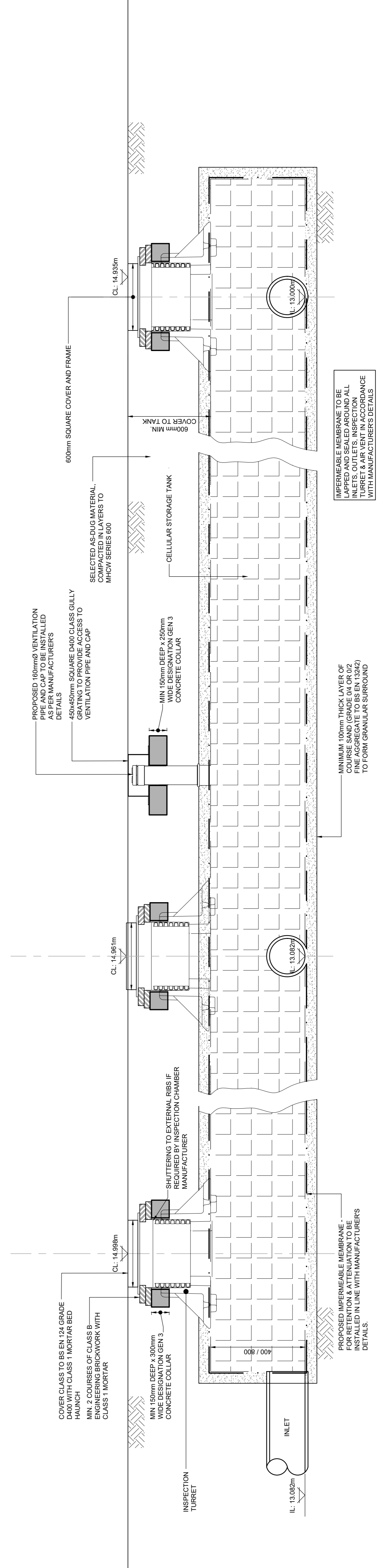
ALL DRAINAGE ANCILLARIES ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS GUIDANCE. PLEASE ENSURE THE DETAILS ADOPTED ARE SUITABLE FOR THE PROPOSED LOADING.

MAINTENANCE JETTING ACCESS POINTS TO BE INSTALLED ALONG THE LENGTH OF THE CRATES IN ACCORDANCE TO MANUFACTURERS DETAILS

IMPERMEABLE MEMBRANE TO BE LAPPED AND SEALED AROUND ALL TURRETS & AIR VENTS IN ACCORDANCE WITH MANUFACTURERS DETAILS

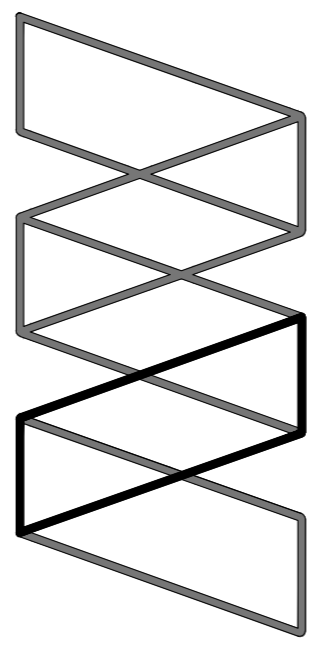
MINIMUM 100mm THICK LAYER OF COURSE SAND (GRADE 0/4 OR 0/2 FINE AGGREGATE TO BS EN 1242) TO FORM GRANULAR SURROUND

IMPERMEABLE GEOMEMBRANE WRAP AROUND POLYSTORM BBA.



SECTION THROUGH CELLULAR STORAGE TANK
SCALE 1:20

Rev.	Description	Date	By	Chk.	App.
T2	TENDER ISSUE	23.04.20	TV	SPG	CH
T1	TENDER ISSUE	05.03.20	BI	BI	CH
P1	PRELIMINARY ISSUE	18.02.20	TV	SPG	CH



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Project PROPOSED SOVEREIGN HOUSE
REDEVELOPMENT, KETTLESTRING LANE
CLIFTON MOOR IND ESTATE, (20,000 F12 UNIT)

Client: IPIF YORK UNIT TRUST

Drawing: TANK DETAILS

SOVEREIGN HOUSE

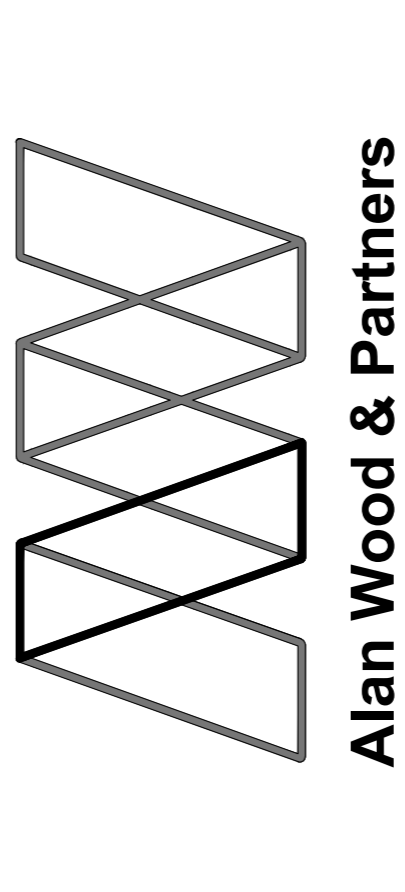
Role: CIVIL ENGINEER

Drawing Status: TENDER

Job no.	43276	Scale	A1+	AS NOTED	Rev.	T2
Project	IPIF - AWP - ZZ - XX - DR - C - 0014	Originator	Volume	Level	Type	Number

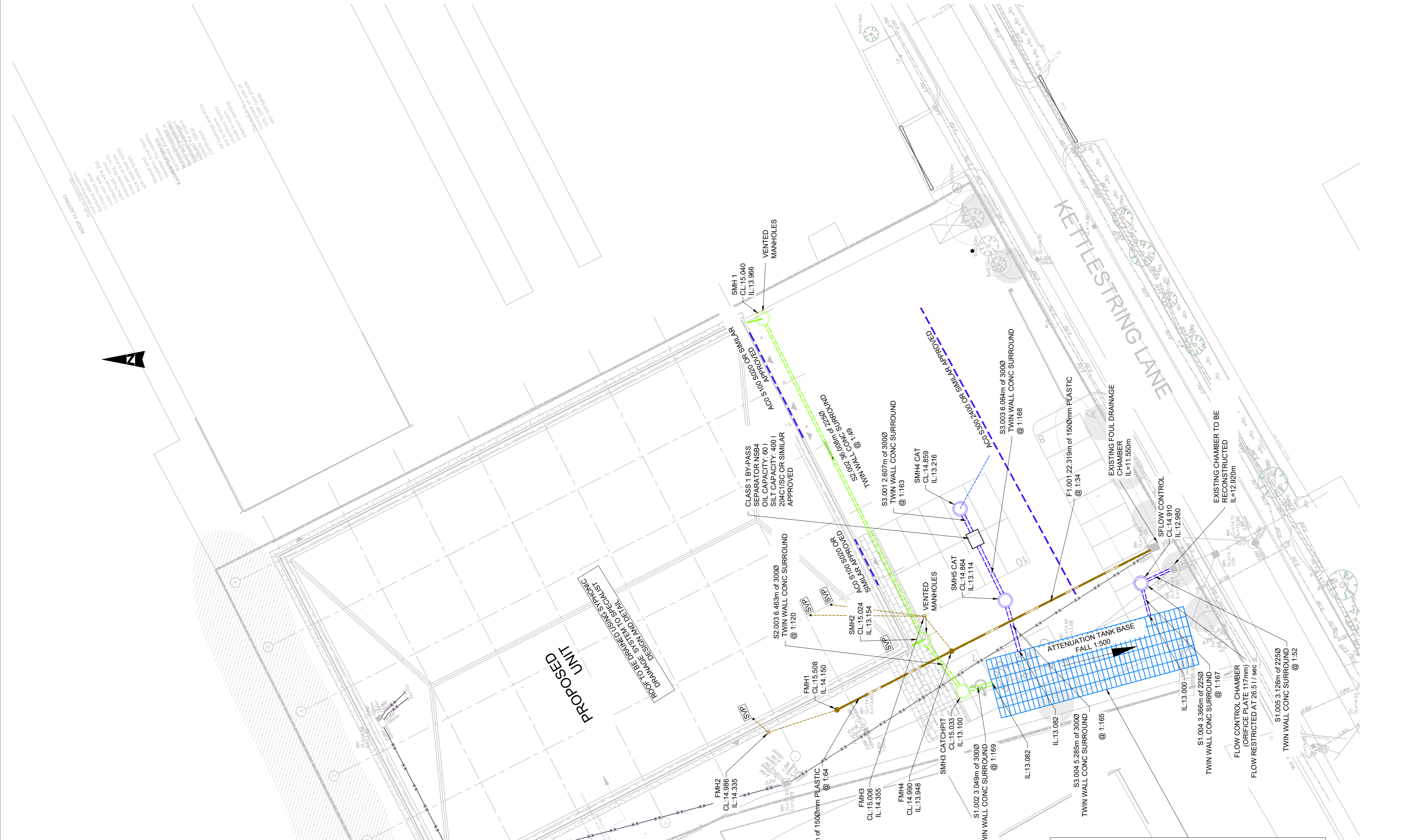
NOTES:
 THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS. WHERE
 1. CONFLICTS OCCUR BETWEEN THESE NOTES AND THE SPECIFICATIONS SHOWN IN
 THE SPECIFICATION, OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND
 ARCHITECTS DRAWINGS.
 3. DRAWINGS NOT TO BE SCALED. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE
 INSTRUCTIONS ON DRAWING BEFORE WORKS COMMENCED.
 4. THE STRUCTURES DESIGNED TO BE SET UP SUPPORTING AND STABLE AFTER THE BUILDING IS
 FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE
 ERECTION PROCEDURE AND SECURE AND ENSURE THAT THE BUILDING AND ITS
 COMPONENTS ARE CAPABLE OF WITHSTANDING THE LOADS OF THE ADDITIONAL WATER
 REMAINING THE PROPERTY OF THE CONTRACTOR ON COMPLETION, AND FOR ENSURING
 THAT THE WORKS AND ANY ADJACENT PROPERTIES ARE SAFE IN THE TEMPORARY
 CONDITION.

DRAINAGE NOTES:
 1. DRAINAGE SYSTEMS TO COMPLY WITH THE FOLLOWING STANDARDS:
 • BS EN 752:2008
 • BUILDING REGULATIONS APPROVED DOCUMENT PART H, 2016 EDITION
 • BS EN 12056-1:2012
 • HWS STANDARDS PLUS 2011
 2. ALL COMPONENTS USED IN DRAINAGE SYSTEMS TO COMPLY WITH THE FOLLOWING BS EN
 492871
 3. ALL DRAINAGE SYSTEMS AND COMPONENTS TO BE CONSTRUCTED AND TESTED TO THE
 RECOMMENDATION OF BOTH BUILDING REGULATIONS AND MANUFACTURER
 INSPECTORS
 4. ALL DRAINAGE TO BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH BS EN 1610:2015.
 5. V.C. DENOTES VITRIFIED CLAY, VITRIFIED CLAY PIPES AND FITTINGS TO COMPLY WITH THE
 RELEVANT PROVISIONS OF BS EN 1203, 2003, 2003, 2007, 2012 AND BS 68 RESPECTIVELY AND
 PIPES SHALL BE EXTRA STRENGTH TO BS 68 OR EQUIVALENT BS 685
 PIPE CRUSHING STRENGTH
 6. LATERAL DRAIN CONNECTIONS PIPES CONNECTING INTO ACCEPTABLE SEWERS TO BE
 VITRIFIED CLAY WHERE COVERS LESS THAN 1.2m TO GROUND LEVEL PIPE PROTECTION IS
 REQUIRED IN THE FORM OF A CONCRETE COVER SLAB
 7. PVC/DENKES UNPLASTICISED POLYVINYL CHLORIDE (PVC-U) PIPES AND FITTINGS TO
 COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 471, BS EN 13472 AND
 BS4660/1982/2000 RESPECTIVELY AND BE KITEMARKED
 8. PRECAST CONCRETE MANHOLES TO BE IN ACCORDANCE WITH BS EN 191:2002 AND BS
 EN 13201:2002 AND TO BE KITEMARKED. PRECAST CONCRETE RINGS AND COVER SLABS
 TO CONCRETE PIPES TO BE JOINED WITH GEMENT MORTAR UNLESS NOTED OTHERWISE.
 9. INSITU AND PRECAST CONCRETE UNITS SHALL HAVE SULPHATE RESISTING PORTLAND
 CEMENT TO BS EN 197:2011.
 10. POLYPROPYLENE INSPECTION CHAMBERS TO COMPLY WITH BS EN 13584:1, 2010, 2, 2016 AND
 BS 7158:2007 AND TO BE KITEMARKED
 11. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS
 EN 24:1, 2021. MANHOLE COVERS AND FRAMES TO BE OF A NON-ROCKING DESIGN
 WITH A MINIMUM OF 10mm CLEARANCE BETWEEN THE COVER AND THE FRAME. ALL
 INACCESSIBLE TO VEHICLES. LOAD CLASSES B125 COVERS TO BE USED IN FOOTWAYS, LOW
 CLASS D400 COVERS TO BE USED IN PRIVATE ROADS. ALL COVERS TO BE BADGED 'TV' OR
 'SW' AS APPROPRIATE. MANHOLE COVER SLABS AND ACCESS TO BE IN ACCORDANCE WITH
 CONCRETE PIPE ASSOCIATION TECHNICAL BULLETIN ISSUED 30 FEBRUARY 2001.
 12. RECESSED MANHOLE COVERS TO BE PROVIDED AS REQUIRED BY THE ARCHITECT.
 UNLESS OTHERWISE STATED, ALL MANHOLES TO BE RECESSED COVERS TO COMPLY
 WITH LOADING REQUIREMENTS, AS STATED IN NOTE 11.
 13. POLYPROPYLENE INSPECTION CHAMBER COVERS AND FRAMES SHALL COMPLY WITH THE
 RELEVANT PROVISIONS OF BS EN 13584:1, 2010, 2, 2016 AND BS 7158:2007 AND TO BE
 NON-ROCKING DESIGN WITH CUSHION INSERTS AND KITEMARKED. LOAD CLASS A15
 COVERS TO BE USED IN AREAS INACCESSIBLE TO VEHICLES. LOAD CLASS B125 COVERS TO
 BE USED IN FOOTWAYS, LOW CLASS D400 COVERS TO BE USED IN PRIVATE ROADS.
 14. ROAD GULLY GRATES AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS
 EN 24:1, 2021. GULLY GRATES AND FRAMES TO BE OF A NON-ROCKING DESIGN
 WITH A MINIMUM OF 10mm CLEARANCE BETWEEN THE GRATE AND THE FRAME. ALL
 INACCESSIBLE TO VEHICLES. LOAD CLASS B125 GRATES TO BE USED IN FOOTWAYS, LOW
 CLASS D400 GRATE AND FRAME. MINIMUM AREA OF WATERWAY TO BE 10cm².
 15. DRAINAGE CHANNELS TO BE 400 BRICKS OF GRATES SHALL COMPLY WITH THE RELEVANT
 PROVISIONS OF BS EN 124:1, 2021 AND BE KITEMARKED. LOAD CLASS A15 GRATES TO
 BE USED IN AREAS INACCESSIBLE TO VEHICLES. LOAD CLASS B125 GRATES TO BE USED IN
 FOOTWAYS, LOW CLASS D400 GRATES TO BE USED IN PRIVATE ROADS. SUMP UNIT AND
 SUMP TRAP UNITS TO BE USED ON ALL GULLIES.



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 Southport: T: 01705 331111
 Leeds: T: 01135 311688

Project: PROPOSED SOVEREIGN HOUSE
 REDEVELOPMENT, KETTLESTRING LANE
 CLIFTON MOOR IND ESTATE, (20,000 F2 UNIT)
 Client: IPIF YORK UNIT TRUST
 Drawing: PROPOSED DRAINAGE DESIGN FORMER
 SOVEREIGN HOUSE
 Rev: CIVIL
 TENDER
 Project Originator Volume Level Type Rev. Number
 IPIF - AWP - ZZ - XX - DR - C - 0502
 43267 Scale@ A1: 1:250
 Job no. 43267
 Date: 21.04.20
 TV: SPG
 CH
 T1: TENDER ISSUE
 05.03.20
 BI
 CH
 P2: INDICATIVE POSITION OF THE SVP AND
 RAINWATER PIPES ADDED.
 21.02.20
 TV
 CH
 CH
 P1: PRELIMINARY ISSUE
 18.02.20
 TV
 SPG
 CH
 Rev. Description Date By Ck. App.



SURFACE MANHOLE SCHEDULE

MH NAME	MH CL (m)	MH IL (m)	MH DEPTH (m)	MH SIZE/TYPE (mm)	INLET PIPE INVERTS (m)	INLET PIPE DIAMETERS (mm)	OUTLET PIPE INVERTS (m)	OUTLET PIPE DIAMETERS (mm)	OUTLET PIPE INVERTS (m)	OUTLET PIPE DIAMETERS (mm)	COVER TYPE	COVER OPENING SIZE, LxW (mm)	COVER OPENING COORDINATES (Eie, mN)	SETTING OUT COORDINATES (Eie, mN)
SFLOW CONTROL	14.970	12.960	1.931	TYPE B	1.004 12.960	225	1.005 12.960	225	1.200	D400	D400	1200X675	459302.786, 455160.947	459302.786, 455160.947
SMH1	15.040	13.966	1.150	TYPE B	2.002 13.966	300	2.002 13.966	300	1.200	D400	D400	1200X675	459329.279, 455198.828	459329.279, 455198.828
SMH2	15.024	13.154	1.870	TYPE B	2.003 13.154	300	2.003 13.154	300	1.200	D400	D400	600X600	459297.085, 455182.700	459297.085, 455182.700
SMH3 CAT	15.033	13.100	1.933	TYPE B	2.003 13.100	300	1.002 13.100	300	1.200	D400	D400	600X600	459291.949, 455178.777	459291.949, 455178.777
SMH4 CAT	14.859	13.216	1.643	TYPE B	3.001 13.216	300	3.001 13.216	300	1.200	D400	D400	1200X675	459310.225, 455179.071	459310.225, 455179.071
SMH5 CAT	14.864	13.114	1.750	TYPE B	3.003 13.114	300	3.004 13.114	300	1.200	D400	D400	1200X675	459301.080, 455174.547	459301.080, 455174.547

FOUL MANHOLE SCHEDULE

MH NAME	MH CL (m)	MH IL (m)	MH DEPTH (m)	MH SIZE/TYPE (mm)	INLET PIPE INVERTS (m)	INLET PIPE DIAMETERS (mm)	OUTLET PIPE INVERTS (m)	OUTLET PIPE DIAMETERS (mm)	COVER TYPE	COVER OPENING SIZE, LxW (mm)	COVER OPENING COORDINATES (Eie, mN)	SETTING OUT COORDINATES (Eie, mN)
FMH1	15.508	14.150	1.358	RAPPIC	1.000 14.150	150	1.000 14.150	150	D400	350X350	459290.083, 455191.398	459290.083, 455191.398
FMH2	14.986	14.335	0.651	PPIC	1.000 14.335	150	1.000 14.335	150	D400	450X450	459287.830, 455198.254	459287.830, 455198.254
FMH3	15.006	14.395	0.651	PPIC	1.000 14.395	150	1.000 14.395	150	D400	450X450	459299.451, 455182.675	459299.451, 455182.675
FMH4	14.990	13.948	1.042	PPIC	1.000 13.948	150	1.001 13.948	150	D400	450X450	459295.865, 455179.917	459295.865, 455179.917

- KEY**
- CAR PARK SURFACE WATER SEWER.
 - ROOF SURFACE WATER SEWER.
 - FOUL WATER SEWER.
 - SURFACE WATER INSPECTION CHAMBER.
 - FOUL WATER INSPECTION CHAMBER.
 - PRIVATE RODDING EYE.
 - INDICATIVE SVP POSITION (TBC)
 - INDICATIVE RAINWATER DOWN PIPE POSITION.
 - 8 FOUL WATER MINI ACCESS INSPECTION CHAMBER.
 - PROPOSED DRAINAGE CHANNELS.
 - PROPOSED OUTFALL PIPES TO BE 1500 AND LAID MINIMUM 1:150
 - EXISTING PIPES TO BE GRUBBED OUT.

PROPOSED ATTENUATION TANK DETAILS (POLYSTYROMER FSNH1a CELLULAR ATTENUATION SYSTEM WITH A VOID RATIO OF 95% (OR SIMILAR APPROVED SYSTEM))

- ATTENUATION VOLUME = 97.56m³
- ACTUAL ATTENUATION VOLUME = 92.7 m³ (95% VOID RATIO)
- ATTENUATION PLAN AREA = 115.9m²
- TOTAL NUMBER OF ATTENUATION GRATES = 485 LAYED IN TWO ROWS
- TOTAL HEIGHT OF THE ATTENUATION TANK = 0.8m

TOTAL PROPOSED IMPERMEABLE AREA = 8.913m²
 DESIGNED TO CONTAIN W100 + 5% AND AN OUTFLOW OF 26.5 L/S

PLEASE ENSURE THE ATTENUATION STRUCTURE CHOSEN IS SUITABLE FOR THE PROPOSED CALCULATIONS ARE TO BE SUBMITTED PRIOR TO CONSTRUCTION.

GENERAL NOTES

WHERE VENT PIPES ARE REQUIRED PLEASE ENSURE THESE ARE DISCREET. PROPOSALS TO BE CONFIRMED WITH CLIENT PRIOR TO CONSTRUCTION PHASE.

ALL DRAINAGE ANCILLARIES ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS GUIDANCE. PLEASE ENSURE THE DETAILS ADOPTED ARE SUITABLE FOR THE PROPOSED LOADING.

MAINTENANCE LETTING ACCESS POINTS TO BE INSTALLED ALONG THE LENGTH OF THE GRATES IN ACCORDANCE TO MANUFACTURERS DETAILS

APPENDIX H

CCTV Survey



Project

Project Name: 10192279 - Kettlestring Development YO30 4XB

Project Date: 24/01/2020

Inspection Standard: MSCC4 Sewers & Drainage GB (SRM4 Scoring)

CCTV Survey Report

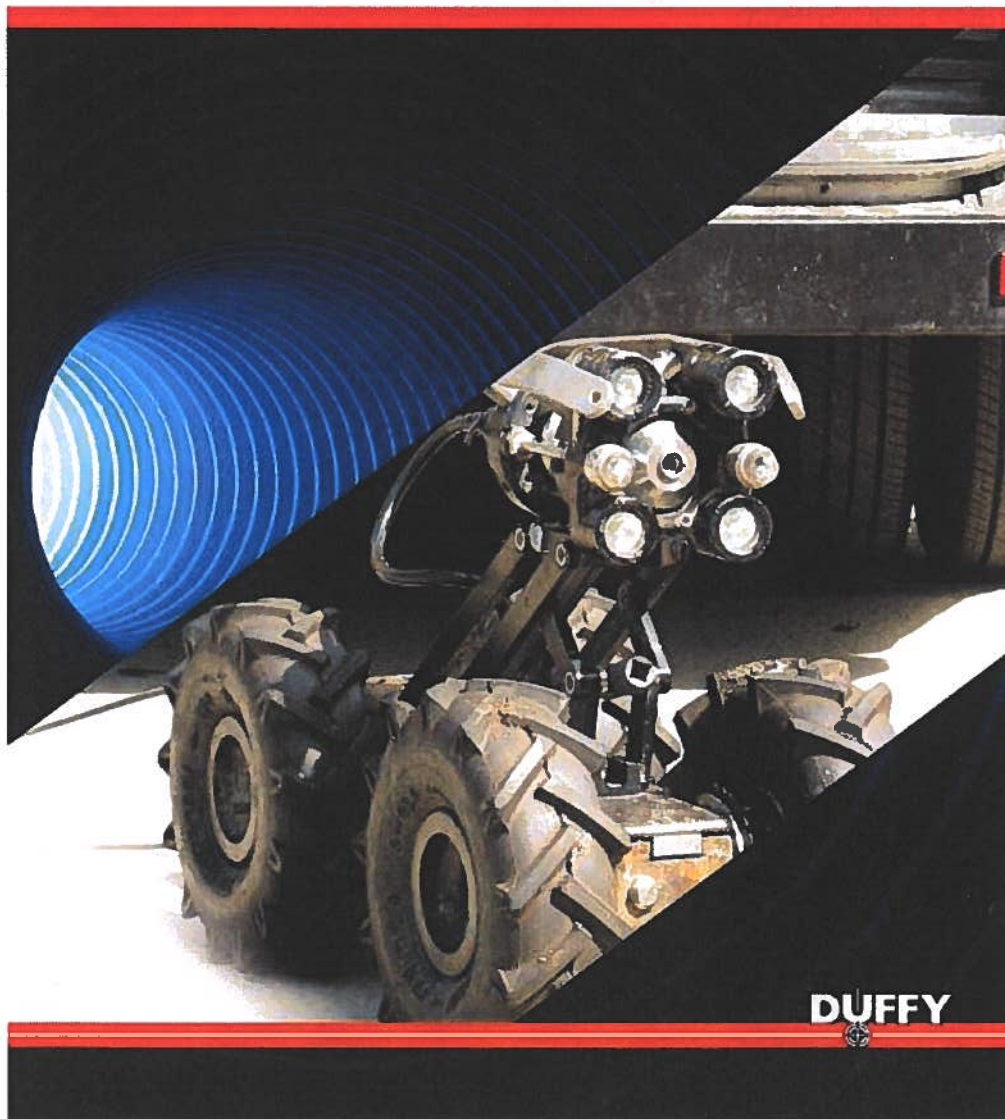




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Project Name	Project Number	Project Date
10192279 - Kettlestring Development YO30 4XB		24/01/2020

Project Information	P-1
Scoring Summary	P-2
Defect Grade Description (Section)	P-3
Project Summary	P-4
Section: 1; S2KL > S1KL (S2KLX)	1
Section: 2; S1KL > S3KL (S1KLX)	5
Section: 3; S4KL > S5KL (S4KLX)	6
Section: 4; F1SC > F2SC (F1SCX)	8
Section: 5; F1KL > Main (F1KLX)	9
Section: 6; S1SC > S2SC (S1SCX)	10
Section: 7; S1SH > S2SH (S1SHX)	12
Section: 8; F1SH > F2SH (F1SHX)	13



Project Information

Project Name	Project Number	Project Date
10192279 - Kettlestring Development YO30 4XB		24/01/2020

Client

Company: Fox Lloyd Jones Ltd
Contact: Chloe Sutherby
Street: Carlton Tower, St Paul's Street
Town or City: Leeds
County: West Yorkshire
Post Code: LS1 2QB
Phone: 0113 24311333

Site

Company: Fox Lloyd Jones Ltd
Contact: Chloe Sutherby
Department: Kettlestring Development
Street: Kettlestring Lane, Clifton Moor
Town or City: York
Post Code: YO30 4XB
Phone: 01132431133

Contractor

Company: DrainsAid
Contact: Mike Booth
Department: CCTV & Desilt supervisor
Street: Connaught House, Park View, Lofthouse Gate
Town or City: Wakefield, WF3 3HA
County: West Yorkshire
Post Code: WF3 3HA
Phone: 0800 0180123
Fax: 01132 365488
Mobile: 07507 816063
Email: m.booth@peterduffyLtd.com

Scoring Summary

Project Name 10192279 - Kettlestring Development YO30 4XB	Project Number	Project Date 24/01/2020
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Structural Defects

- Grade 3: Best practice suggests consideration should be given to repairs in the medium term.
- Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.
- Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
1	S2KLX	5	Collapsed drain or sewer
3	S4KLX	3	Fracture, circumferential at joint from 5 o'clock to 6 o'clock

Service / Operational Condition

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

Abandoned Surveys

Section	PLR	Description
1	S2KLX	Survey abandoned
2	S1KLX	Survey abandoned

Information

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

Defect Grade Description (Section)

Project Name	Project Number	Project Date
10192279 - Kettlestring Development YO30 4XB		24/01/2020
1:	<p>Brick: No structural defects.</p> <p>Pipe: No structural defects.</p> <p>Acceptable structural condition.</p>	
2:	<p>Brick: Circumferential cracking; single longitudinal crack; surface mortar loss (depth missing < 15mm); surface damage - slight spalling (breaking away of small fragments from the surface); surface damage - slight wear (increased roughness).</p> <p>Pipe: Circumferential crack; moderate joint defects (i.e. medium open joint or medium displaced joint); surface damage - slight spalling (breaking away of small fragments from the surface) or slight wear (increased roughness).</p> <p>Minimal collapse likelihood in the short term but potential for further deterioration.</p>	
3:	<p>Brick: Medium mortar loss (depth missing 15-50mm) without other defects; more than one longitudinal crack (at a single location); multiple cracking; single bricks displaced; deformation < 5%; no fracture and only moderate mortar loss; surface damage - medium spalling (large areas of chipped brick); surface damage - medium wear (large area of brick surface is missing).</p> <p>Pipe: Fracture with no deformation or deformation < 5%; longitudinal cracking or multiple cracking; minor loss of level; severe joint defects (i.e. large open joint or large displaced joint); surface damage - partial area of pipe surface is missing or worn.</p> <p>I Collapse unlikely in the near future but further deterioration likely I</p>	
4:	<p>Brick: Total mortar loss (depth missing > 50mm) with deformation > 10%; deformation up to 10% and fractured; displaced or hanging brickwork; small number of missing bricks; dropped invert (drop > 20mm); moderate loss of level; surface damage - large spalling (entire surface of brick is missing); surface damage - large wear (entire surface of brick is missing).</p> <p>Pipe: Broken; deformation up to 10% and broken; fracture with deformation 5-10%; multiple fractures; serious loss of level; serious joint defects with voids or soil visible (open joint with > 50mm soil or void visible or joint displacement > 25% of diameter); surface damage - entire area of pipe surface is missing or severely worn.</p> <p>!! Collapse likely in the foreseeable future !!</p>	
5:	<p>Brick: Already collapsed; missing Invert; deformation > 10% and fractured; displaced or hanging brickwork and deformation < 10%; extensive areas of missing brickwork.</p> <p>Pipe: Already collapsed; deformation > 10% and broken; extensive areas of pipe fabric missing; fractures with deformation > 10%</p> <p>!!! Collapsed or collapse imminent !!!</p>	



DrainsAid
 Connaught House, Park View, Liffhouse Gate, Wakefield, WF3 3HA
 Tel. 0800 0160123

Project Summary

Project Name 10192279 - Kettlesting Development YO30 4XB	Project Number	Project Date 24/01/2020
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Pipe Summary

No.	Type	PLR	Upstream Node	Downstream Node	Road	Town	Use	Mat.	Profile	Length
1	SEC	S2KLX	S2KL	S1KL	Lysander Close Off	Clifton Moor, York	S	VC	Circular 225mm	40.00 m
2	SEC	S1KLX	S1KL	S3KL	Lysander Close Off	Clifton Moor, York	S	VC	Circular 225mm	50.00 m
3	SEC	S4KLX	S4KL	S5KL	Lysander Close Off	Clifton Moor, York	S	VC	Circular 300mm	7.40 m
4	SEC	F1SCX	F1SC	F2SC	Seafire Close Off	Clifton Moor, York	F	VC	Circular 150mm	3.80 m
5	SEC	F1KLX	F1KL	MAIN	Kettlesting Development	York	F	VC	Circular 150mm	6.80 m
6	SEC	S1SCX	S1SC	S2SC	Kettlesting Development	York	S	VC	Circular 225mm	14.00 m
7	SEC	S1SHX	S1SH	S2SH	Kettlesting Development	York	S	VC	Circular 225mm	4.00 m
8	SEC	F1SHX	F1SH	F2SH	Kettlesting Development	York	F	VC	Circular 150mm	9.80 m
Total:										135.80 m

Pipe Levels

No.	PLR	Upstream Node	Upstream C.L.	Upstream I.L.	Upstream I.D.	Downstream Node	Downstream C.L.	Downstream I.L.	Downstream I.D.
1	S2KLX	S2KL			0.000 m	S1KL			1.300 m
2	S1KLX	S1KL			1.300 m	S3KL			0.000 m
3	S4KLX	S4KL			1.360 m	S5KL			0.000 m
4	F1SCX	F1SC			1.520 m	F2SC			0.000 m
5	F1KLX	F1KL			1.730 m	MAIN			0.000 m
6	S1SCX	S1SC			1.180 m	S2SC			1.450 m
7	S1SHX	S1SH			1.940 m	S2SH			2.620 m
8	F1SHX	F1SH			3.440 m	F2SH			3.720 m



Project Summary

Project Name 10192279 - Kettlesting Development_YO30 4XB	Project Number Project Date 24/01/2020
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Pipe Summary by Profile

Profile	Total Length	No. Pipes
Circular 150mm	3.80 m	
Circular 150mm	6.80 m	
Circular 150mm	9.80 m	
Circular 150mm	= 20.40 m	3
Circular 225mm	40.00 m	
Circular 225mm	50.00 m	
Circular 225mm	14.00 m	
Circular 225mm	4.00 m	
Circular 225mm	= 108.00 m	4
Circular 300mm	7.40 m	
Circular 300mm	= 7.40 m	1
Total	= 135.80 m	8

Inspection Summary

Pipe No.	Insp. No.	Upstream Node	Downstream Node	Dir.	Operator	Insp. Date	Insp. Time	Str	Ser	Final Observation	Length
1	1	S2KL	S1KL	US	C.Chilton	24/01/2020	9:13	2	5	SA, XP	19.80 m
2	1	S1KL	S3KL	DS	C.Chilton	24/01/2020	10:01	1	1	SA, CUZ	29.90 m
3	1	S4KL	S5KL	DS	C.Chilton	24/01/2020	11:07	2	3	MHF	7.40 m
4	1	F1SC	F2SC	DS	C.Chilton	24/01/2020	12:28	1	1	MHF	3.80 m
5	1	F1KL	MAIN	DS	C.Chilton	20/02/2020	17:47	1	1	BRF, Node point	6.80 m
6	1	S1SC	S2SC	DS	C.Chilton	20/02/2020	18:10	2	1	MHF	14.00 m
7	1	S1SH	S2SH	DS	C.Chilton	20/02/2020	18:45	1	1	MHF	4.00 m
8	1	F1SH	F2SH	DS	C.Chilton	20/02/2020	18:51	1	1	MHF	9.80 m
Total:											95.50 m



DrainsAid
 Connaught House, Park View, Liffhouse Gate, Wakefield,
 WF3 3HA
 Tel. 0800 0180123

Project Summary

Project Name 10192279 - Kettlesting Development YO30 4XB	Project Date 24/01/2020
Project Number	

Inspection Summary by Profile

Profile	Total Length	No. Inspections
Circular 150mm	3.80 m	
Circular 150mm	6.80 m	
Circular 150mm	9.80 m	
Circular 150mm	20.40 m	3
Circular 225mm	19.80 m	
Circular 225mm	29.90 m	
Circular 225mm	14.00 m	
Circular 225mm	4.00 m	
Circular 225mm	67.70 m	4
Circular 300mm	7.40 m	
Circular 300mm	7.40 m	1
Total	95.50 m	8

Defect Summary

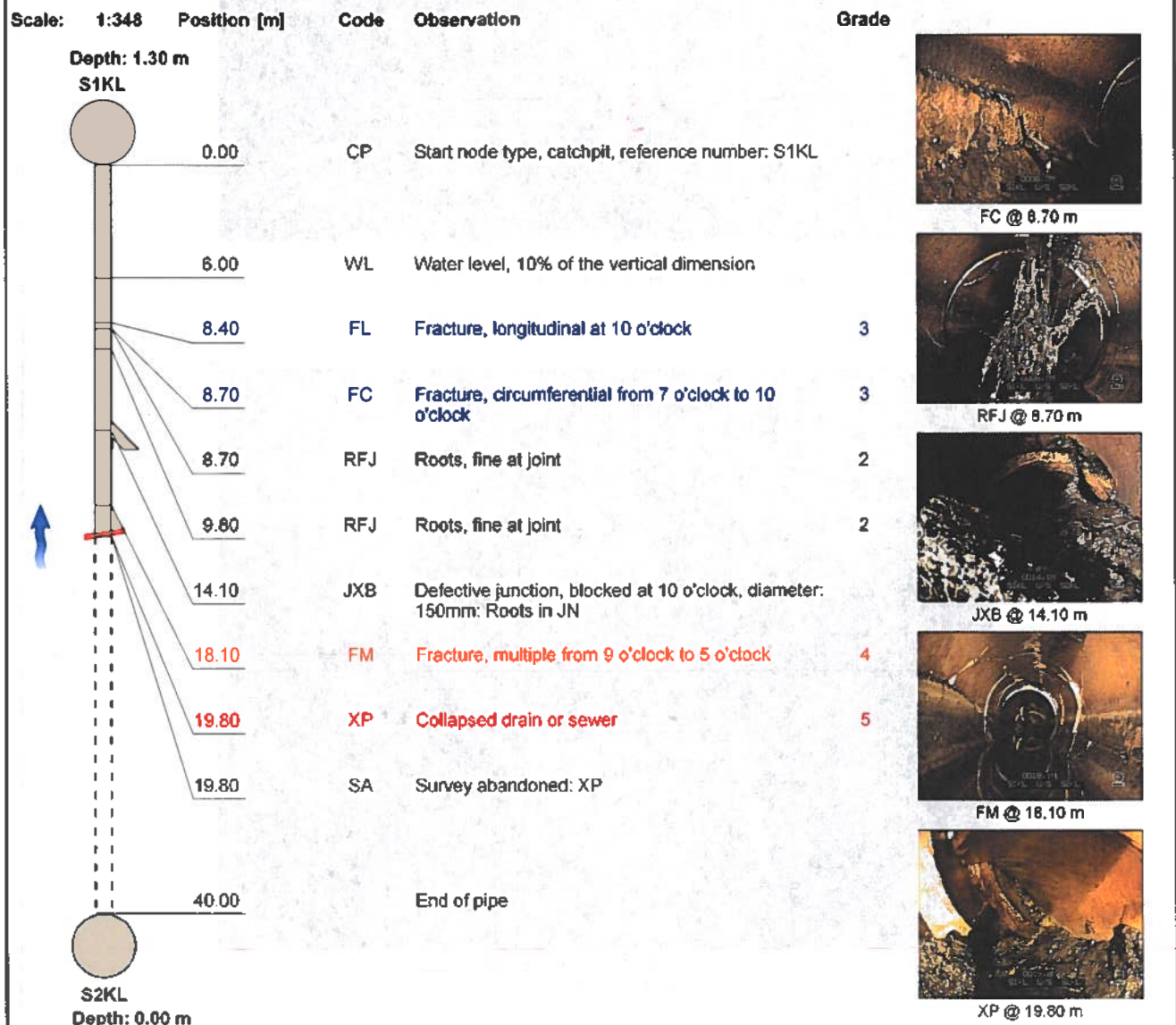
Sect. No.	Insp. No.	Upstream Node	Downstream Node	CCTV Drainage Survey Observation Count																				
				General					Structural Condition					Service Condition										
				Insp. Length (m)	No. Grade 4/6 Obs.	Survey Abandoned	Camera Under Water	Cracks	Fractures	Broken	Deformed	Collapsed	Holes	Surface Damage	Displaced Joints	Open Joints	Roots	Infiltration	Encrustation	Silt	Grease	Obstruction	Water Level	Line Deviates
1	1	S2KL	S1KL	19.8	2	1			3			1					2						1	
2	1	S1KL	S3KL	29.9		1													1				6	
3	1	S4KL	S5KL	7.4				1	1														2	
4	1	F1SC	F2SC	3.8																			1	
5	1	F1KL	MAIN	6.8											1	1	1						2	2
6	1	S1SC	S2SC	14.0																			1	1
7	1	S1SH	S2SH	4.0																			1	1
8	1	F1SH	F2SH	9.8				1	4			1			1	1	3						1	5
Total:				95.5	2	2		1	4		1	1			1	1	3						15	5

Section Inspection - 24/01/2020 - S2KLX

Section 1	Inspection 1	Date 24/01/20	Time 9:13	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Yes	PLR S2KLX
Operator C.Chilton		Vehicle YA63NNX		Camera Pan & Tilt Zoom	Preset Length 1.00 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village: Clifton Moor, York	Inspection Direction: Upstream	Upstream Node: S2KL
Road: Lysander Close Off	Inspected Length: 19.80 m	Upstream Pipe Depth: 0.000 m
Location: Road	Total Length: 40.00 m	Downstream Node: S1KL
Surface Type: Asphalt Highway	Joint Length: 1.00 m	Downstream Pipe Depth: 1.300 m
Use: Surface water	Pipe Shape: Circular	
Type of Pipe: Gravity drain/sewer	Dia/Height: 225 mm	
Year Constructed:	Pipe Material: Vitrified clay pipe (i.e. all clayware)	
Flow Control: No flow control	Lining Type: No Lining	
Inspection Purpose: Sample survey to determine asset condition	Lining Material: No Lining	

Comments:
Recommendations: Collapsed pipe possible dig



STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
4	165.0	16.4	325.0	5.0	2	1.0	0.1	2.0	2.0

Section Pictures - 24/01/2020 - S2KLX

Section	Inspection Direction	FLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	S2KLX		10192279



1, 00:02:11, 8.70 m
Fracture, circumferential from 7 o'clock to 10 o'clock



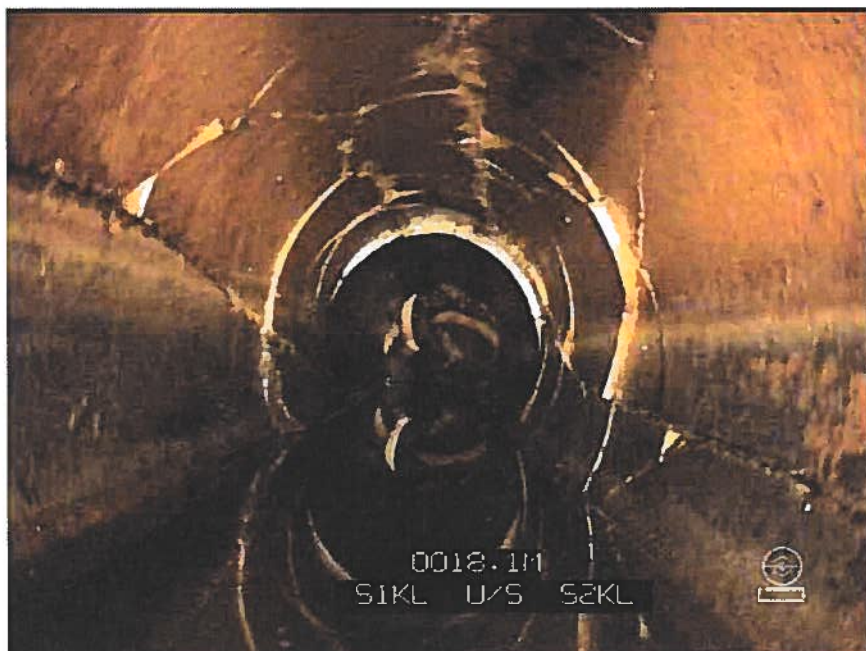
2, 00:02:22, 8.70 m
Roots, fine at joint

Section Pictures - 24/01/2020 - S2KLX

Section	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	S2KLX		10192279



3, 00:03:33, 14.10 m
 Defective junction, blocked at 10 o'clock, diameter: 150mm, Roots in JN



4, 00:04:11, 18.10 m
 Fracture, multiple from 9 o'clock to 5 o'clock

Section Pictures - 24/01/2020 - S2KLX

Section	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	S2KLX		10192279

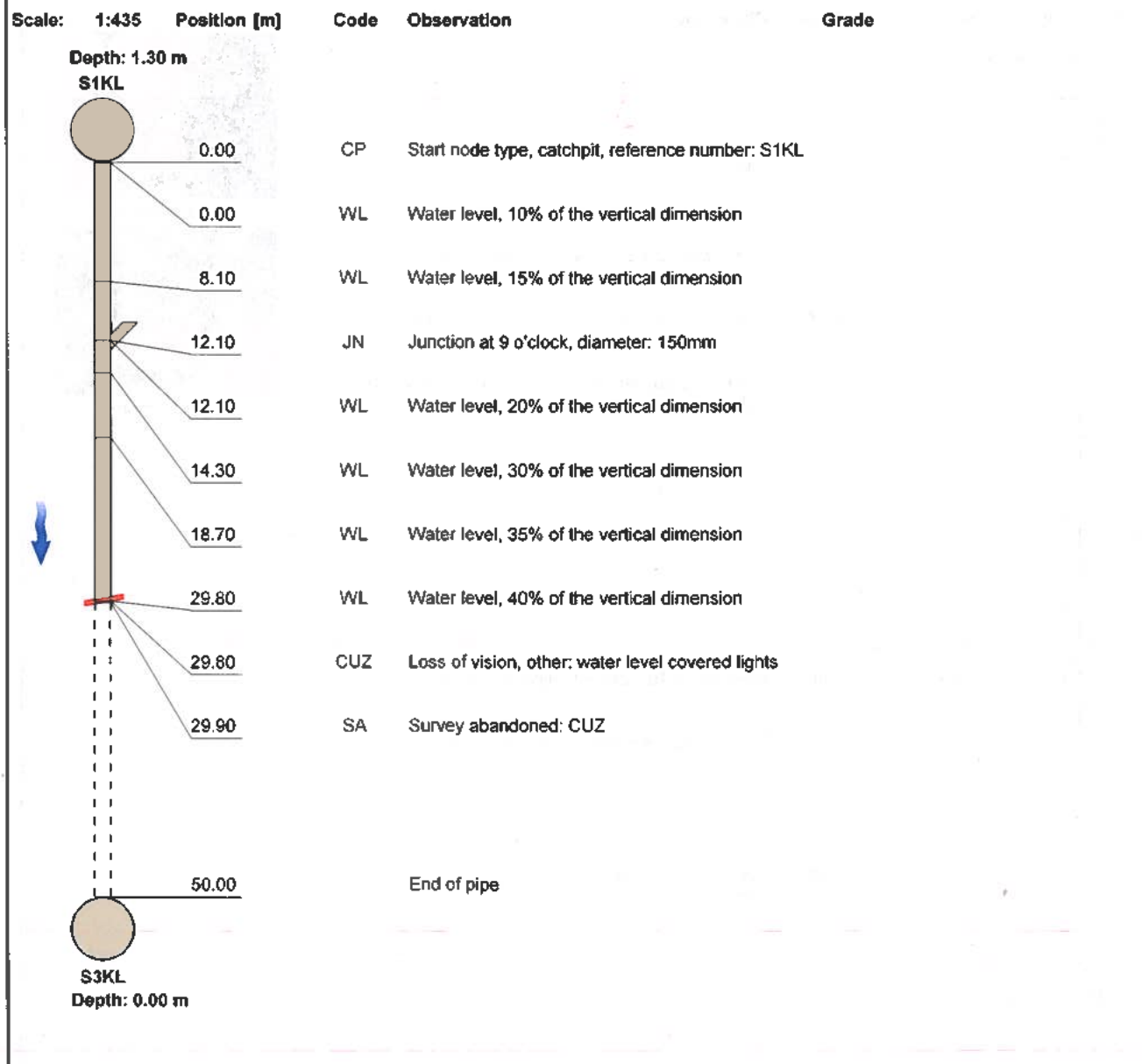


5, 00:04:31, 19.80 m
Collapsed drain or sewer

Section Inspection - 24/01/2020 - S1KLX

Section 2	Inspection 2	Date 24/01/20	Time 10:01	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Yes	PLR S1KLX
Operator C.Chilton		Vehicle YA63NNX		Camera Pan & Tilt Zoom	Preset Length 1.00 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village:	Clifton Moor, York	Inspection Direction:	Downstream	Upstream Node:	S1KL
Road:	Lysander Close Off	Inspected Length:	29.90 m	Upstream Pipe Depth:	1.300 m
Location:	Road	Total Length:	50.00 m	Downstream Node:	S3KL
Surface Type:	Asphalt Highway	Joint Length:	1.00 m	Downstream Pipe Depth:	0.000 m
Use:	Surface water	Pipe Shape:	Circular	Year Constructed:	
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm	Flow Control:	No flow control
Inspection Purpose:	Sample survey to determine asset condition	Pipe Material:	Vitrified clay pipe (i.e. all clayware)	Inspection Purpose:	Sample survey to determine asset condition
Comments:	Total length estimated UTLO S3KL		Lining Type:	No Lining	
Recommendations:	Investigation required D/S		Lining Material:	No Lining	



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

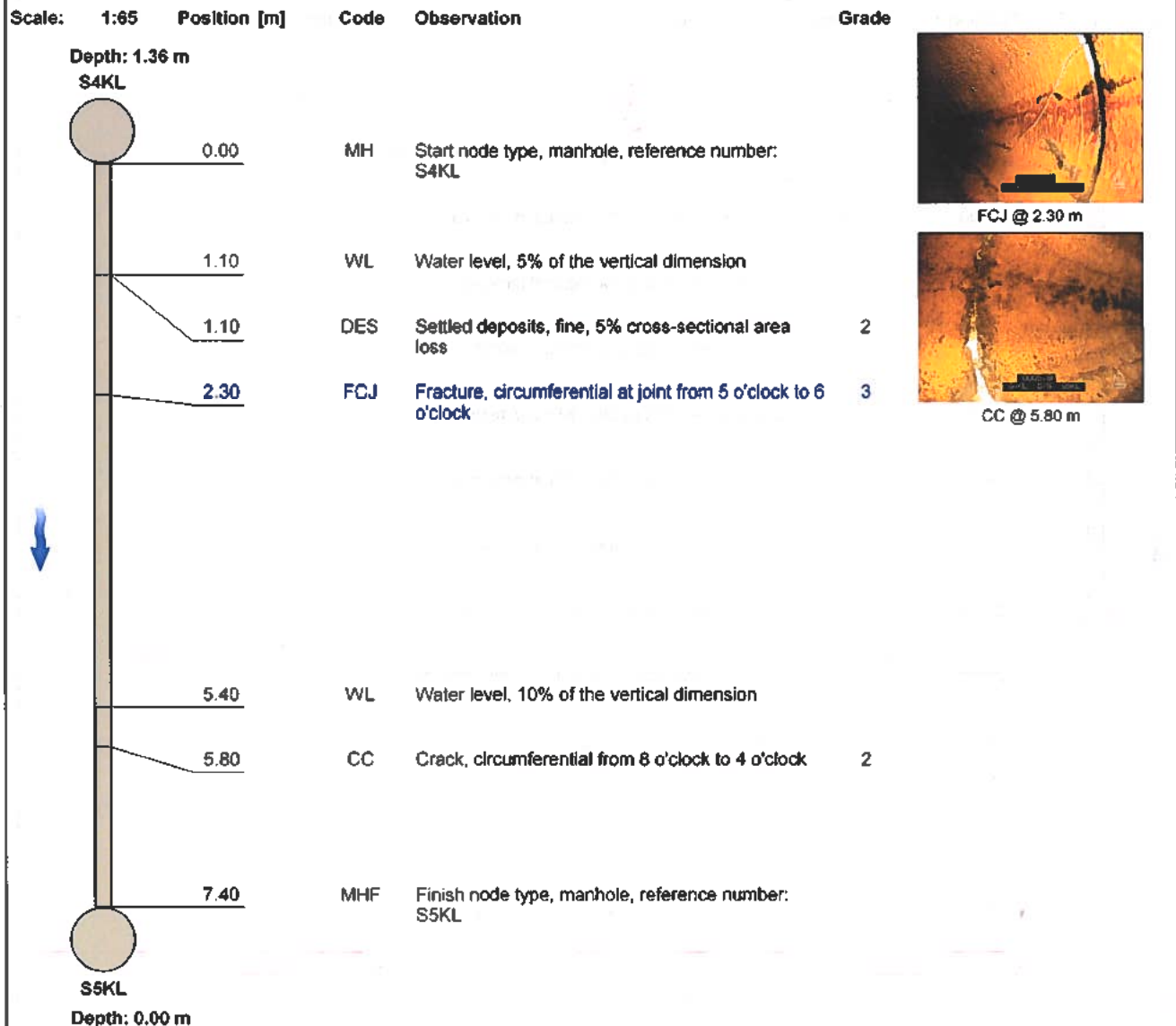
Section Inspection - 24/01/2020 - S4KLX

Section 3	Inspection 3	Date 24/01/20	Time 11:07	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Yes	PLR S4KLX
Operator C.Chilton		Vehicle YA63NNX		Camera Pan & Tilt Zoom	Preset Length 1.10 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village:	Clifton Moor, York	Inspection Direction:	Downstream	Upstream Node:	S4KL
Road:	Lysander Close Off	Inspected Length:	7.40 m	Upstream Pipe Depth:	1.360 m
Location:	Verge	Total Length:	7.40 m	Downstream Node:	S5KL
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:	300 mm
Year Constructed:		Pipe Material:	Vitrified clay pipe (i.e. all clayware)
Flow Control:	No flow control	Lining Type:	No Lining
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining

Comments:
Recommendations: None



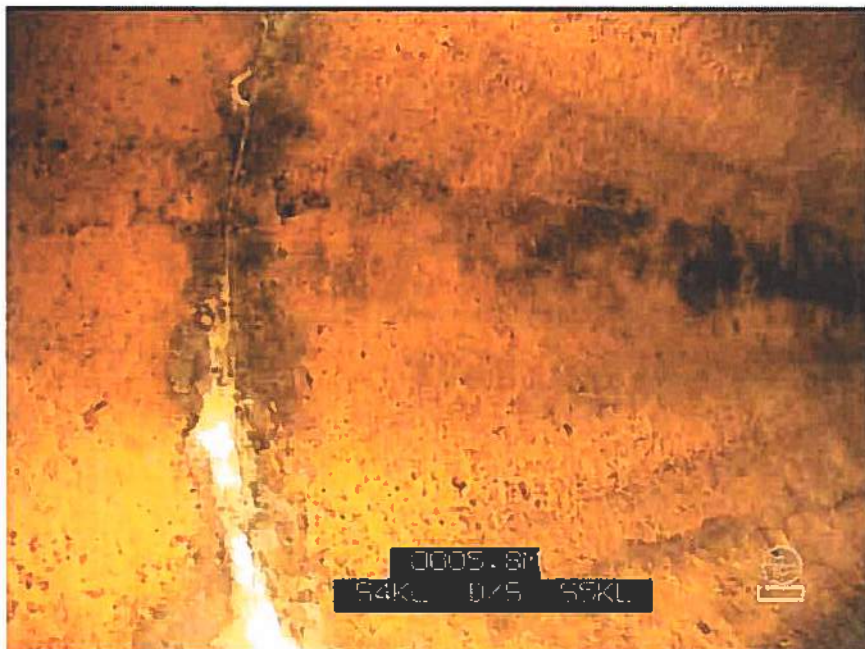
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	40.0	8.6	50.0	3.0	1	1.0	0.2	1.0	2.0

Section Pictures - 24/01/2020 - S4KLX

Section	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Downstream	S4KLX		10192279



1, 00:00:49, 2.30 m
Fracture, circumferential at joint from 5 o'clock to 6 o'clock



2, 00:01:43, 5.80 m
Crack, circumferential from 8 o'clock to 4 o'clock

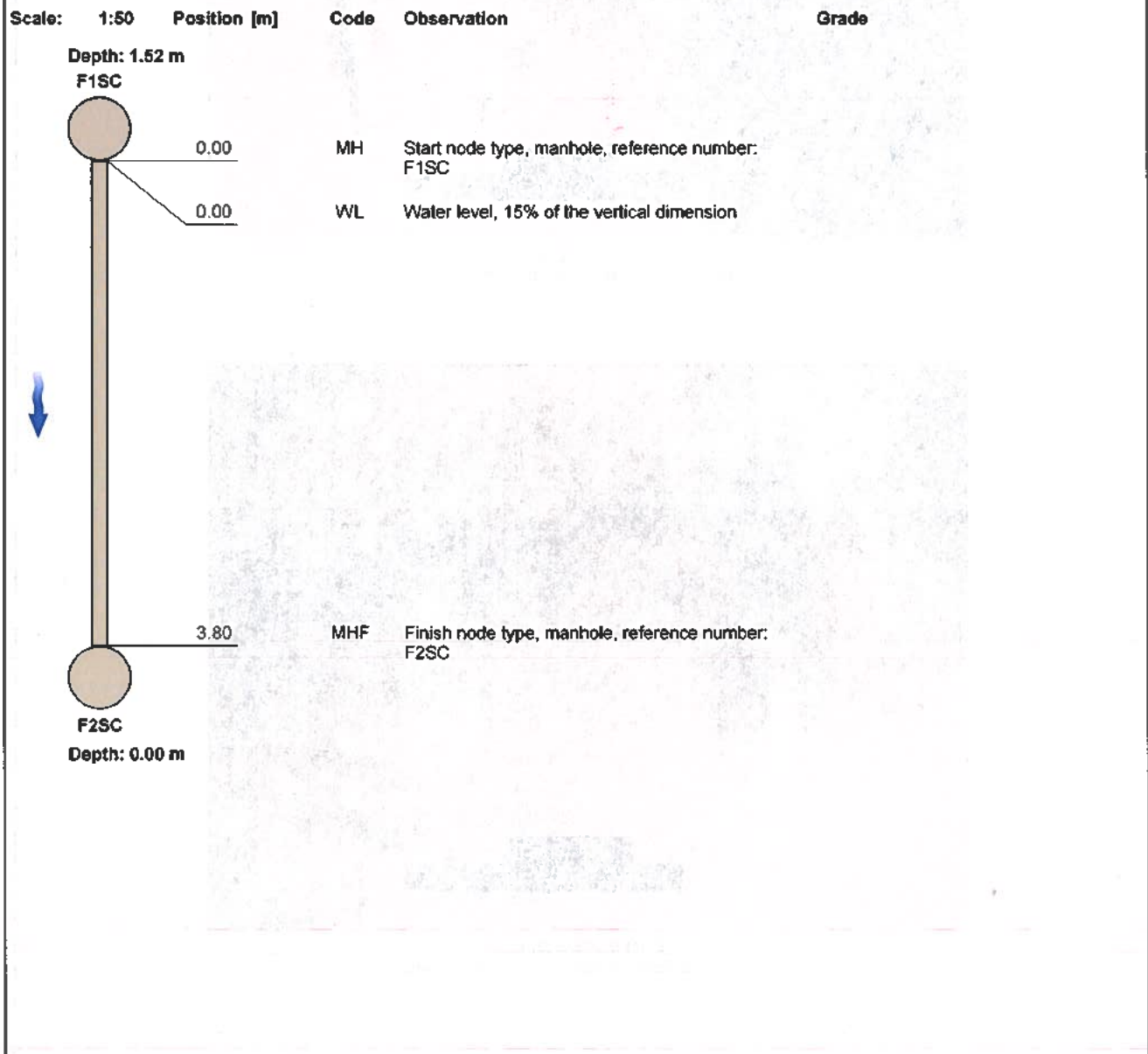
Section Inspection - 24/01/2020 - F1SCX

Section 4	Inspection 4	Date 24/01/20	Time 12:28	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Yes	PLR F1SCX
Operator C.Chilton		Vehicle YA63NNX		Camera Forward Facing	Preset Length 0.90 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village:	Clifton Moor, York	Inspection Direction:	Downstream	Upstream Node:	F1SC
Road:	Seafire Close Off	Inspected Length:	3.80 m	Upstream Pipe Depth:	1.520 m
Location:	Verge	Total Length:	3.80 m	Downstream Node:	F2SC
Surface Type:	Grass	Joint Length:	1.00 m	Downstream Pipe Depth:	0.000 m

Use:	Foul	Pipe Shape:	Circular
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm
Year Constructed:		Pipe Material:	Vitrified clay pipe (i.e. all clayware)
Flow Control:	No flow control	Lining Type:	No Lining
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining

Comments:
Recommendations: None



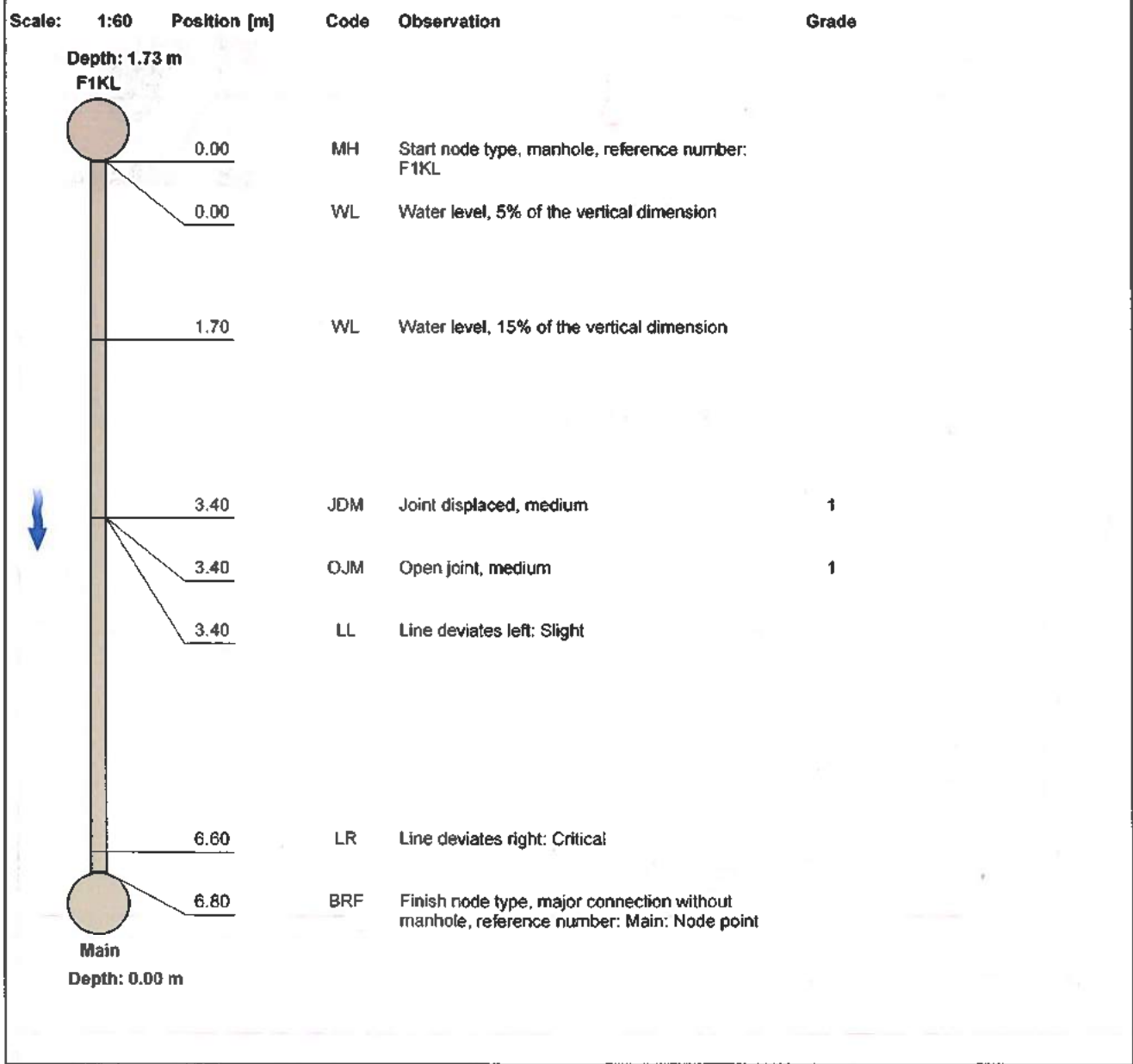
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Inspection - 20/02/2020 - F1KLX

Section 5	Inspection 1	Date 20/02/20	Time 17:47	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR F1KLX
Operator C.Chilton		Vehicle YD13 JZC		Camera Forward Facing	Preset Length 0.90 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village:	York	Inspection Direction:	Downstream	Upstream Node:	F1KL
Road:	Kettlestring Development	Inspected Length:	6.80 m	Upstream Pipe Depth:	1.730 m
Location:	Verge	Total Length:	6.80 m	Downstream Node:	MAIN
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	0.000 m
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Year Constructed:		Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Flow Control:	No flow control	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

Comments:
Recommendations: None



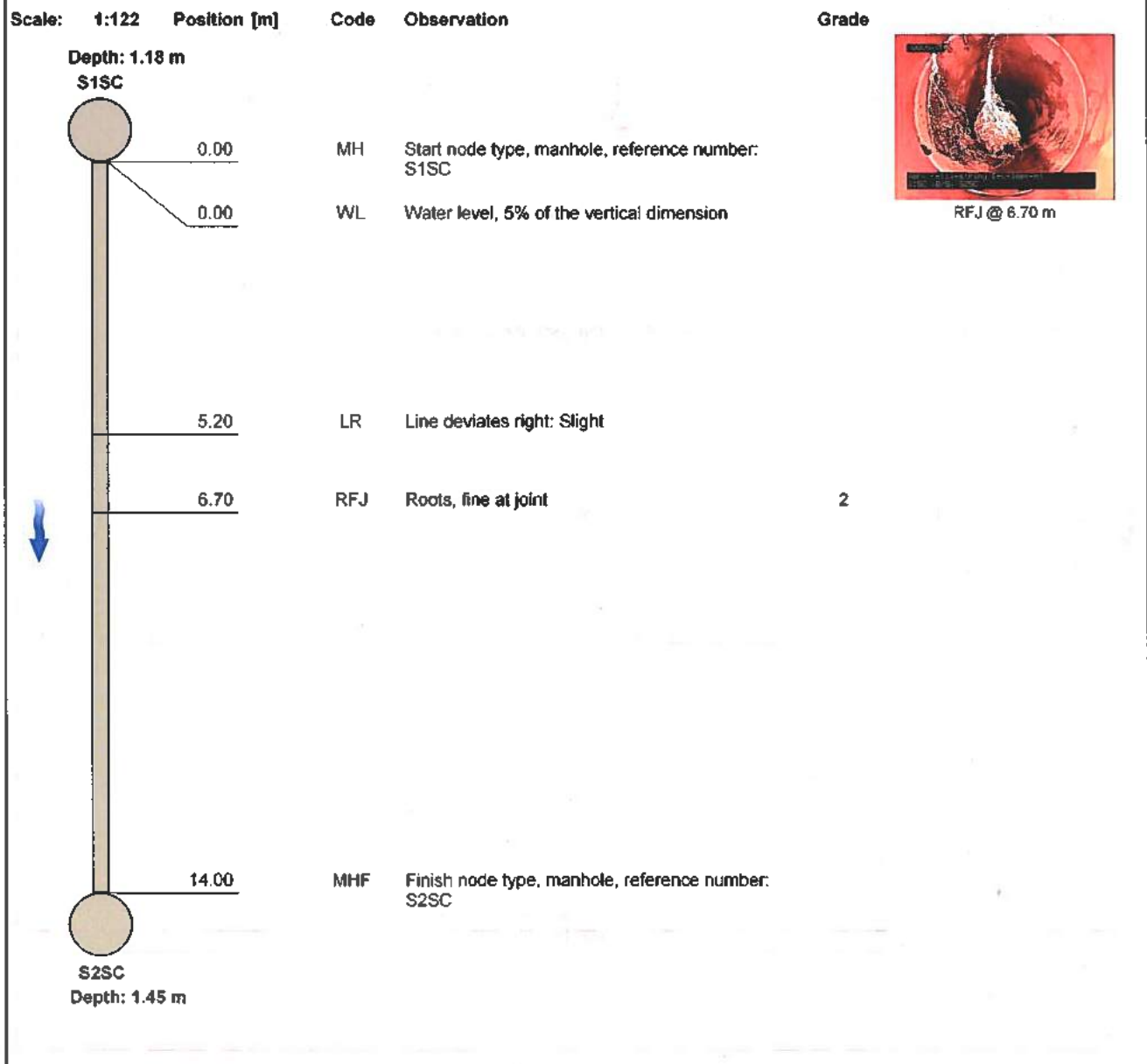
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
2	2.0	0.3	2.0	1.0	0	0.0	0.0	0.0	1.0

Section Inspection - 20/02/2020 - S1SCX

Section 6	Inspection 2	Date 20/02/20	Time 18:10	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR S1SCX
Operator C.Chilton		Vehicle YD13 JZC		Camera Forward Facing	Preset Length 1.00 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village:	York	Inspection Direction:	Downstream	Upstream Node:	S1SC
Road:	Kettistring Development	Inspected Length:	14.00 m	Upstream Pipe Depth:	1.180 m
Location:	Verge	Total Length:	14.00 m	Downstream Node:	S2SC
Surface Type:		Joint Length:	1.00 m	Downstream Pipe Depth:	1.450 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Year Constructed:		Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Flow Control:	No flow control	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

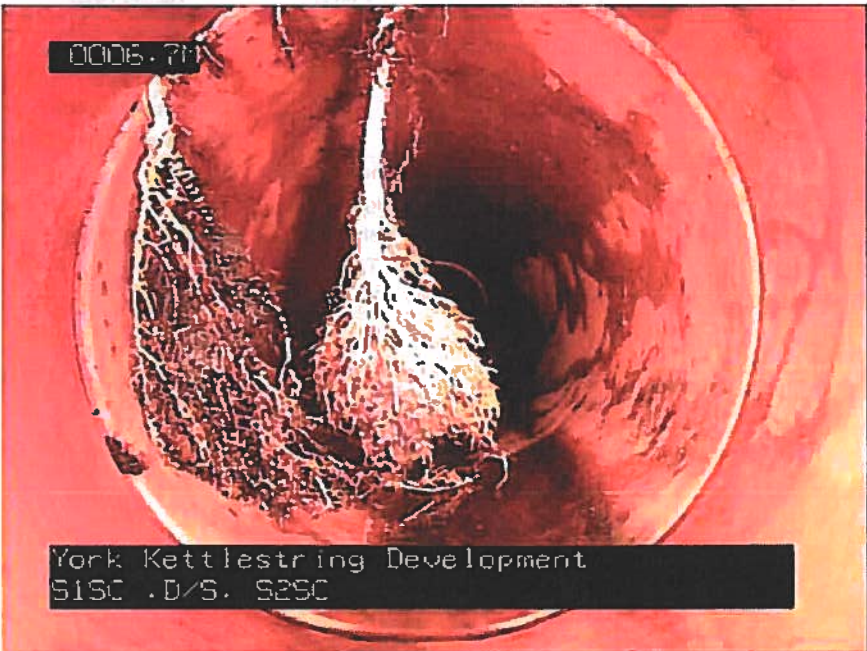
Comments:
Recommendations: Root Cut required



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	1	1.0	0.1	1.0	2.0

Section Pictures - 20/02/2020 - S1SCX

Section	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
6	Downstream	S1SCX		10192451



1, 00:01:13, 6.70 m
Roots, fine at joint

Section Inspection - 20/02/2020 - S1SHX

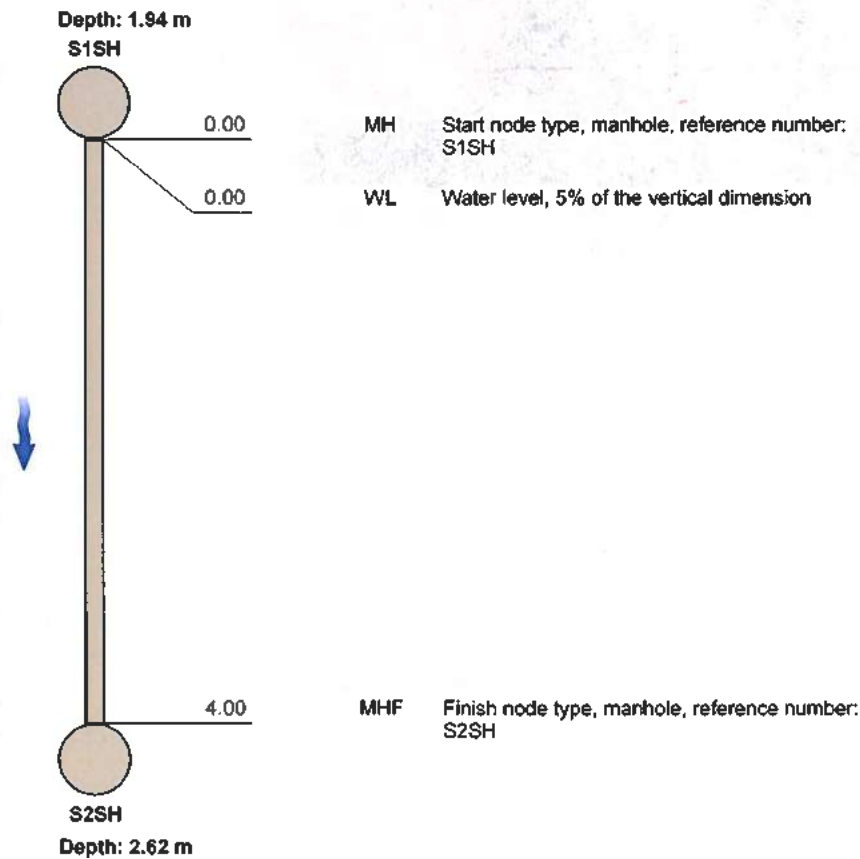
Section 7	Inspection 3	Date 20/02/20	Time 18:45	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR S1SHX
Operator C.Chilton		Vehicle YD13 JZC		Camera Forward Facing	Preset Length 1.00 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village:	York	Inspection Direction:	Downstream	Upstream Node:	S1SH
Road:	Kettlestring Development	Inspected Length:	4.00 m	Upstream Pipe Depth:	1.940 m
Location:	Verge	Total Length:	4.00 m	Downstream Node:	S2SH
Surface Type:		Joint Length:	1.80 m	Downstream Pipe Depth:	2.620 m
Use:	Surface water	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	225 mm		
Year Constructed:		Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Flow Control:	No flow control	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		

Comments:

Recommendations: None

Scale: 1:50 Position [m] Code Observation Grade

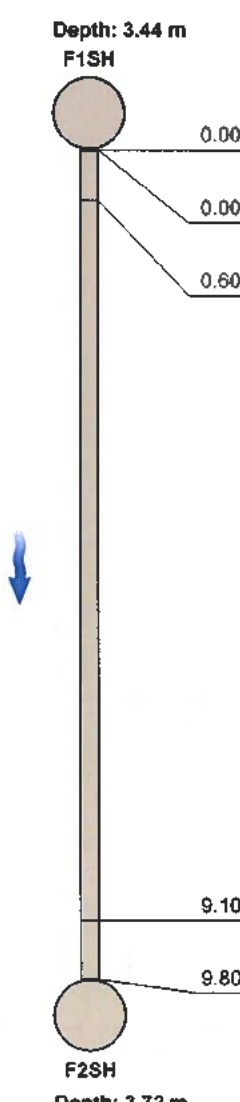


STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

Section Inspection - 20/02/2020 - F1SHX

Section 8	Inspection 4	Date 20/02/20	Time 18:51	Client's Job Ref Not Specified	Weather Rain	Pre Cleaned Yes	PLR F1SHX
Operator C.Chilton		Vehicle YD13 JZC		Camera Forward Facing	Preset Length 0.90 m	Legal Status Private Drain	Alternative ID Not Specified

Town or Village:	York	Inspection Direction:	Downstream	Upstream Node:	F1SH
Road:	Kettiestring Development	Inspected Length:	9.80 m	Upstream Pipe Depth:	3.440 m
Location:	Verge	Total Length:	9.80 m	Downstream Node:	F2SH
Surface Type:		Joint Length:	1.50 m	Downstream Pipe Depth:	3.720 m
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	150 mm		
Year Constructed:		Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Flow Control:	No flow control	Lining Type:	No Lining		
Inspection Purpose:	Sample survey to determine asset condition	Lining Material:	No Lining		
Comments:					
Recommendations:	None				

Scale:	1:86	Position [m]	Code	Observation	Grade				
									
	0.00	MH	Start node type, manhole, reference number: F1SH						
	0.00	WL	Water level, 5% of the vertical dimension						
	0.60	LR	Line deviates right: Slight						
	9.10	LR	Line deviates right: Slight						
	9.80	MHF	Finish node type, manhole, reference number: F2SH						
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

Plan 1 A

COO'S WORK



- NOTES:
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.
 3. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE SPECIFIED.
 4. ALL DIMENSIONS ARE TO SURFACE UNLESS OTHERWISE SPECIFIED.
 5. ALL DIMENSIONS ARE TO FINISH UNLESS OTHERWISE SPECIFIED.
 6. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE SPECIFIED.
 7. ALL DIMENSIONS ARE TO SURFACE UNLESS OTHERWISE SPECIFIED.
 8. ALL DIMENSIONS ARE TO FINISH UNLESS OTHERWISE SPECIFIED.
 9. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE SPECIFIED.
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 19. ALL DIMENSIONS ARE TO SURFACE UNLESS OTHERWISE SPECIFIED.
 20. ALL DIMENSIONS ARE TO FINISH UNLESS OTHERWISE SPECIFIED.

KEY

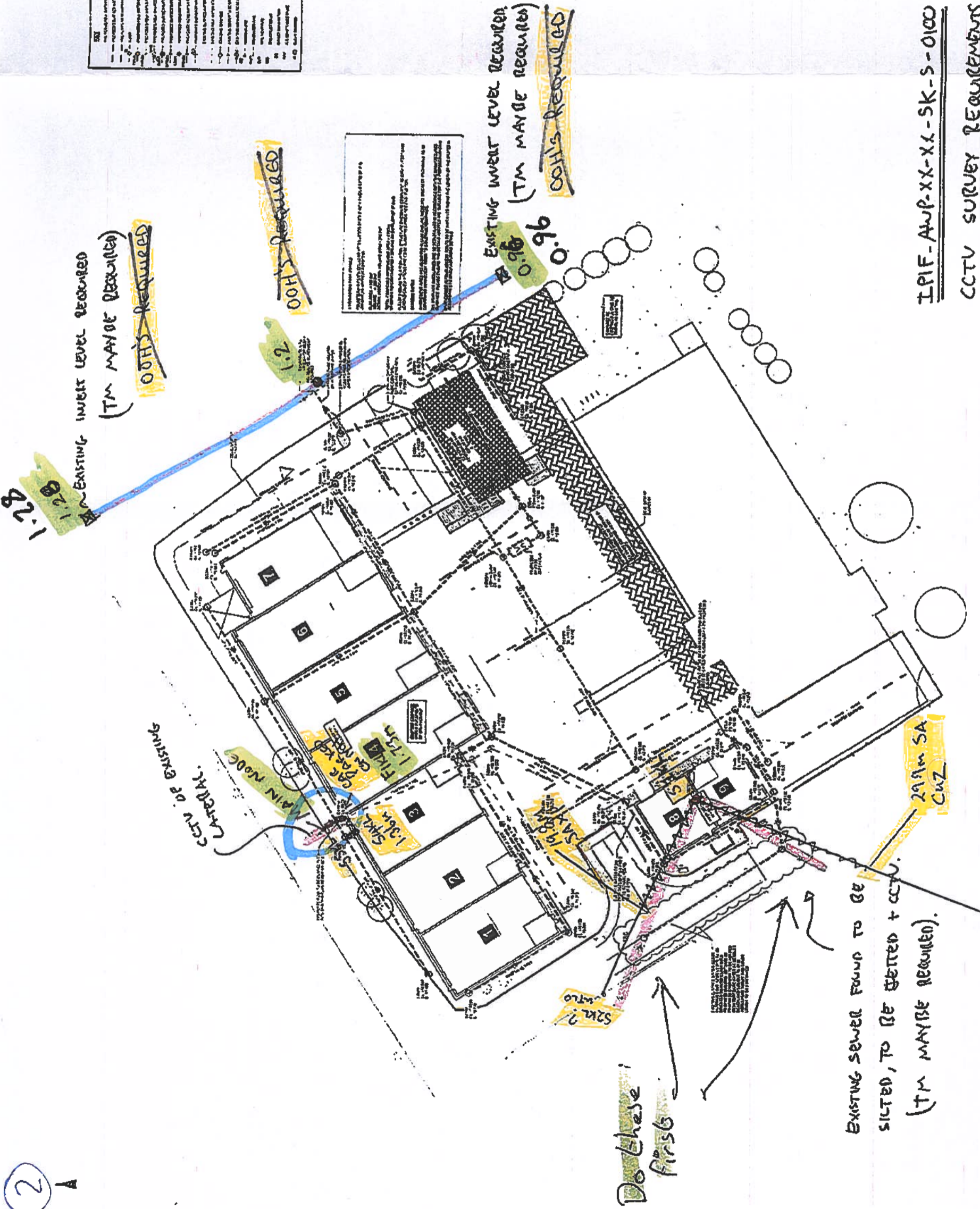
---	PROPOSED DRAINAGE LINES
---	EXISTING DRAINAGE LINES
---	PROPOSED SIDEWALKS
---	EXISTING SIDEWALKS
---	PROPOSED DRIVEWAYS
---	EXISTING DRIVEWAYS
---	PROPOSED PATHS
---	EXISTING PATHS
---	PROPOSED FENCES
---	EXISTING FENCES
---	PROPOSED WALLS
---	EXISTING WALLS
---	PROPOSED ROOFS
---	EXISTING ROOFS
---	PROPOSED TERRACES
---	EXISTING TERRACES
---	PROPOSED DECKS
---	EXISTING DECKS
---	PROPOSED PORCHES
---	EXISTING PORCHES
---	PROPOSED PATIOS
---	EXISTING PATIOS
---	PROPOSED BALCONIES
---	EXISTING BALCONIES
---	PROPOSED STAIRS
---	EXISTING STAIRS
---	PROPOSED RAMPWAYS
---	EXISTING RAMPWAYS
---	PROPOSED ELEVATORS
---	EXISTING ELEVATORS
---	PROPOSED ESCALATORS
---	EXISTING ESCALATORS
---	PROPOSED MECHANICAL ROOMS
---	EXISTING MECHANICAL ROOMS
---	PROPOSED ELECTRICAL ROOMS
---	EXISTING ELECTRICAL ROOMS
---	PROPOSED TELEPHONE ROOMS
---	EXISTING TELEPHONE ROOMS
---	PROPOSED STORAGE ROOMS
---	EXISTING STORAGE ROOMS
---	PROPOSED OFFICES
---	EXISTING OFFICES
---	PROPOSED RECEPTION AREAS
---	EXISTING RECEPTION AREAS
---	PROPOSED WAITING AREAS
---	EXISTING WAITING AREAS
---	PROPOSED LOBBIES
---	EXISTING LOBBIES
---	PROPOSED CONFERENCE ROOMS
---	EXISTING CONFERENCE ROOMS
---	PROPOSED BOARD ROOMS
---	EXISTING BOARD ROOMS
---	PROPOSED EXECUTIVE OFFICES
---	EXISTING EXECUTIVE OFFICES
---	PROPOSED MANAGER OFFICES
---	EXISTING MANAGER OFFICES
---	PROPOSED ADMINISTRATIVE OFFICES
---	EXISTING ADMINISTRATIVE OFFICES
---	PROPOSED SUPPORT OFFICES
---	EXISTING SUPPORT OFFICES
---	PROPOSED STORAGE OFFICES
---	EXISTING STORAGE OFFICES
---	PROPOSED OFFICE BUILT-UPS
---	EXISTING OFFICE BUILT-UPS
---	PROPOSED OFFICE PARTITIONS
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---	PROPOSED OFFICE DESKS
---	EXISTING OFFICE DESKS
---	PROPOSED OFFICE CHAIRS
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---	EXISTING OFFICE CABINETS
---	PROPOSED OFFICE DRAWERS
---	EXISTING OFFICE DRAWERS
---	PROPOSED OFFICE SHelves
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---	PROPOSED OFFICE LIGHTS
---	EXISTING OFFICE LIGHTS
---	PROPOSED OFFICE VENTILATION
---	EXISTING OFFICE VENTILATION
---	PROPOSED OFFICE HEATING
---	EXISTING OFFICE HEATING
---	PROPOSED OFFICE COOLING
---	EXISTING OFFICE COOLING
---	PROPOSED OFFICE SOUND
---	EXISTING OFFICE SOUND
---	PROPOSED OFFICE SECURITY
---	EXISTING OFFICE SECURITY
---	PROPOSED OFFICE ACCESS
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---	PROPOSED OFFICE OFFICE COOLING
---	EXISTING OFFICE OFFICE COOLING
---	PROPOSED OFFICE OFFICE SOUND
---	EXISTING OFFICE OFFICE SOUND
---	PROPOSED OFFICE OFFICE SECURITY
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---	PROPOSED OFFICE OFFICE ACCESS
---	EXISTING OFFICE OFFICE ACCESS
---	PROPOSED OFFICE OFFICE EGRESS
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---	PROPOSED OFFICE OFFICE ENTRY
---	EXISTING OFFICE OFFICE ENTRY
---	PROPOSED OFFICE OFFICE EXIT
---	EXISTING OFFICE OFFICE EXIT
---	PROPOSED OFFICE OFFICE RECEPTION
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---	EXISTING OFFICE OFFICE LOBBY
---	PROPOSED OFFICE OFFICE CONFERENCE
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---	PROPOSED OFFICE OFFICE BOARD
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---	PROPOSED OFFICE OFFICE EXECUTIVE
---	EXISTING OFFICE OFFICE EXECUTIVE
---	PROPOSED OFFICE OFFICE ADMINISTRATIVE
---	EXISTING OFFICE OFFICE ADMINISTRATIVE
---	PROPOSED OFFICE OFFICE SUPPORT
---	EXISTING OFFICE OFFICE SUPPORT
---	PROPOSED OFFICE OFFICE STORAGE
---	EXISTING OFFICE OFFICE STORAGE

PHASE 2 KETTLESTRONG LANE
 IPIF YORK UNIT TRUST
 PROPOSED DRAINAGE LAYOUT
 FORMER SWEETENHOUSE
 CIVIL
 PRELIMINARY
 4/20/10
 1200
 P2
 IPIF-ANP-ZZ-XX-SK-S-0101

Alan Wood & Partners
 Consulting Civil & Structural Engineers
 Project Manager
 Building Surveyors
 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

CCTU OF EXISTING LATERAL (2 No.)
 IPIF-ANP-XX-XX-SK-S-0101
 CCTU SURVEY REQUIREMENTS.

Plan 2
A



NO.	DESCRIPTION
1	PROPOSED SEWER
2	EXISTING SEWER
3	PROPOSED WATER
4	EXISTING WATER
5	PROPOSED GAS
6	EXISTING GAS
7	PROPOSED RAIN WATER
8	EXISTING RAIN WATER
9	PROPOSED TELEPHONE
10	EXISTING TELEPHONE
11	PROPOSED CABLE
12	EXISTING CABLE
13	PROPOSED FIBRE OPTIC
14	EXISTING FIBRE OPTIC
15	PROPOSED POWER
16	EXISTING POWER
17	PROPOSED LIGHTNING
18	EXISTING LIGHTNING
19	PROPOSED EARTHING
20	EXISTING EARTHING
21	PROPOSED STRUCTURE
22	EXISTING STRUCTURE
23	PROPOSED LANDSCAPE
24	EXISTING LANDSCAPE
25	PROPOSED PAVEMENT
26	EXISTING PAVEMENT
27	PROPOSED CURB
28	EXISTING CURB
29	PROPOSED SIGNAGE
30	EXISTING SIGNAGE
31	PROPOSED FENCE
32	EXISTING FENCE
33	PROPOSED LIGHTING
34	EXISTING LIGHTING
35	PROPOSED SECURITY
36	EXISTING SECURITY
37	PROPOSED ACCESS
38	EXISTING ACCESS
39	PROPOSED DRIVEWAY
40	EXISTING DRIVEWAY
41	PROPOSED PARKING
42	EXISTING PARKING
43	PROPOSED PLANTING
44	EXISTING PLANTING
45	PROPOSED UTILITIES
46	EXISTING UTILITIES
47	PROPOSED STRUCTURES
48	EXISTING STRUCTURES
49	PROPOSED LANDSCAPES
50	EXISTING LANDSCAPES

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. THE PROPOSED SEWER LINE IS TO BE INSTALLED AT A DEPTH OF 1.20M TO 1.50M.
3. THE PROPOSED WATER LINE IS TO BE INSTALLED AT A DEPTH OF 0.90M TO 1.20M.
4. THE PROPOSED GAS LINE IS TO BE INSTALLED AT A DEPTH OF 0.75M TO 1.00M.
5. THE PROPOSED RAIN WATER LINE IS TO BE INSTALLED AT A DEPTH OF 0.30M TO 0.45M.
6. THE PROPOSED TELEPHONE AND CABLE LINES ARE TO BE INSTALLED AT A DEPTH OF 0.30M TO 0.45M.
7. THE PROPOSED POWER AND LIGHTNING LINES ARE TO BE INSTALLED AT A DEPTH OF 0.75M TO 1.00M.
8. THE PROPOSED EARTHING SYSTEM IS TO BE INSTALLED AT A DEPTH OF 0.30M TO 0.45M.
9. THE PROPOSED STRUCTURES ARE TO BE CONSTRUCTED TO A MINIMUM HEIGHT OF 2.40M.
10. THE PROPOSED LANDSCAPE IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
11. THE PROPOSED PAVEMENT IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
12. THE PROPOSED CURB IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
13. THE PROPOSED SIGNAGE IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
14. THE PROPOSED FENCE IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
15. THE PROPOSED LIGHTING IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
16. THE PROPOSED SECURITY IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
17. THE PROPOSED ACCESS IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
18. THE PROPOSED DRIVEWAY IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
19. THE PROPOSED PARKING IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
20. THE PROPOSED PLANTING IS TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
21. THE PROPOSED UTILITIES ARE TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.
22. THE PROPOSED STRUCTURES ARE TO BE CONSTRUCTED TO A MINIMUM HEIGHT OF 2.40M.
23. THE PROPOSED LANDSCAPES ARE TO BE INSTALLED TO A DEPTH OF 0.15M TO 0.30M.

PHASE 2 RETAIL STORE DEVELOPMENT
CLIFTONWOOD YORK

BY YORK UNIT TRUST

PROPOSED DRAWING AT PHASE 2
RETAIL STORE DEVELOPMENT
CLIFTONWOOD YORK

DATE: 12/10/10
DRAWN BY: [Name]
CHECKED BY: [Name]
SCALE: 1:100

PHASE 2 RETAIL STORE DEVELOPMENT
CLIFTONWOOD YORK

DATE: 12/10/10
DRAWN BY: [Name]
CHECKED BY: [Name]
SCALE: 1:100

IPIF-AWP-XX-XX-SK-S-0100
CCTV SURVEY REQUIREMENTS.

EXISTING SEWER FOUND TO BE
SILTED, TO BE BETTER + CCTV.
(TM MAYBE REQUIRED).

Do these
first

S3K?
W10

29.9m SA
CUZ

EXISTING INVERT LEVEL REQUIRED
0.96 (TM MAYBE REQUIRED)
OOH'S REQUIRED

1.2
OOH'S REQUIRED

EXISTING INVERT LEVEL REQUIRED
(TM MAYBE REQUIRED)
OOH'S REQUIRED

1.28

1.28



West Huntington

Southwest Bay

IPF - AWP - XX-XX-SK - S-0103
EXISTING S/W SEWERS

Clifton Moor
Industrial Estate

Clifton Moor Retail Park

Rokko Health Club

Project Name	IPF - AWP - XX-XX-SK - S-0103
Drawing Title	EXISTING S/W SEWERS
Scale	AS SHOWN
Author	
Checked	
Approved	
Date	

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Modular Design
Parametric Modelling
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Renewable Energy
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Road & Drainage Design
Site Investigations
Site Supervision
Structural Engineering
Sulphate Attack Specialists
Temporary Works
Topographic & Measured Surveys
Traffic Assessments

Quality Assurance Accreditation

ISO 9001 Registered firm
Certificate no. GB.02/07

Environmental Accreditation

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Certificate no. GB.09/277b



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