MOTT MACDONALD

Technical Note

Project:	Barnsley Children's Hospital		
Our reference:	BCAU-MMD-00-XX-TN-D-0001		
Prepared by:	J Lea-Wilson	**Date:**	05/02/2020
Approved by:	A Precious	**Checked by:**	A Precious
Subject:	Surface Water Planning Conditions		

1 Project Background

Barnsley Hospital NHS Trust are proposing the development of a new co-located children's Emergency Department (ED) and Children's Assessment Unit (CAU) as an extension to the existing building. The proposed development is located to the north of the existing building and will extend the existing Emergency Department towards Gawber Road.

Barnsley Hospital is located in the north east of Barnsley, approximately 1.5km from the town centre. The OS grid reference of the site is SE332070 and has postcode S75 2PX.

The site is currently part of the Barnsley Hospital NHS site and is used as disabled parking and drop-off for the existing Emergency Department. The proposed development area is accessed via three entrances off Gawber Road and from the site access road that serves the ED drop-off and the ambulance arrival area.

Figure 1.1: Phase 1 and Phase 2 Areas

Source: Google Maps

It is proposed that the work will be completed in two phases. Phase 1 involves work to the ambulance area and car park. Phase 2 involves the extension to the north of the existing hospital building. This report will focus on the Phase 2 development and the proposed surface water management strategy.

2 Surface Water Management

2.1 Control of Surface Water Run-Off

It should be acknowledged that the satisfactory collection, control and discharge of storm water is now a principal planning and design consideration.

Part H of the Building Regulations 2015 recommends that surface water run-off shall discharge to one of the following, listed in order of priority:

- An adequate soakaway or some other adequate infiltration system, or where that is not reasonably practicable;
- A watercourse, or, where that is not reasonably practicable;
- A surface water sewer.

It is necessary to identify the most appropriate method of controlling and discharging surface water.

2.1.1 Infiltration based systems

A ground investigation, consisting of two dynamic sampling boreholes was completed in the location of the proposed CAU extension. The results of which are described in the MM Geotechnical and Geo-environmental Assessment. The assessment notes that there is made ground to a depth of 0.75-1.1m beneath which is the Pennine Middle Coal Measurers formation. This formation consists of bands of sandstone and mudstone / siltstone. This is typically weak with some laminations and fractures. Such findings indicate that the ground is likely to be unsuitable for the disposal of large volumes of surface water.

Notwithstanding the above, there is limited space available for an infiltration device (e.g. a soakaway or infiltration trench), due to the confined site (e.g. trees), the need for emergency vehicle access during construction, and the need for an infiltration device to be located at least 5m away from the building foundations[1]. These constraints mean that infiltration has been deemed unsuitable for this development.

2.1.2 Watercourses

There are no watercourses on or near the development site. As such, this means of surface water disposal has been discounted.

2.1.3 Adopted Sewers

Since infiltration and a connection to a watercourse are not practical for this site, it is proposed that the site discharges to the existing surface water network.

It is also noted that CCTV survey of the existing site has identified that the existing hardstanding and car park in this area are drained to the adopted surface water system in this area.

[1] Building Regulations Part H Section 3.25 a

2.2 Site Discharge

2.2.1 Proposed Development Area

The extension to the hospital building has an area of 730m^2. The entirety of this extension is to be built over the existing carpark/roadway. There will therefore be no increase in the impermeable area pre and post-development, and therefore no increase in the runoff volume or flow rate from the development.

Figure 2.1: Phase 2 Development Area Showing Extension

Source: Google Maps

2.2.2 Water Quality Improvements

In addition, the water quality of the runoff should improve as a result of the extension, as roof runoff has less pollutants than road runoff.

2.2.3 Conclusion

It is therefore considered acceptable for the surface water runoff from the new development to discharge unattenuated into the existing surface water drainage system. This has been agreed in principle by Yorkshire Water, subject to satisfactory evidence at planning stage as stated via email[2].

Discharge rates will be the same as existing since the total impermeable area is the same for the proposed site as existing and there will be a slight increase in the quality of runoff post-development given the reduced area of vehicle accessible impermeable area.

[2] RE: Barnsley NHS Surface Water Management Strategy [RE: Allowable discharge rates]

2.3 Proposed Drainage Layout and Supporting Documents

The proposed drainage masterplan for the development is included in Appendix 0. The system discharges to the existing onsite drainage network. Topographical & Utility and CCTV surveys are also included in Appendix B and C respectively.

A. Proposed Drainage Layout

- MMD-397596-00-XX-DR-C-0028 Phase 2&3 Drainage Masterplan

Notes

1. Do not scale from this drawing. If in doubt, please ask.
2. All details are preliminary and subject to review.
3. All levels are in metres above ordnance datum.
4. All dimensions are in mm unless otherwise noted.
5. Existing drainage data from 1st Horizon survey drawing MMB-BH5132-TS Barnsley Hospital Topographic & Utility Survey (13.02.19) dated 14.02.19.
6. Foul drainage pop ups from drawings BAU-MMD-00-00-DR-M-5201 and BAU-MMD-00-00-DR-M-5202.
7. Rain water pipes from drawing 85419-DAY-02-00-DR-A-52-0101_P1.
8. Cover levels to be confirmed once external landscaping strategy completed.
9. Foul drainage to be installed to Part H minimum gradients and at 1v:40h under slab. All SVPs to be roddable.
10. All manhole covers to be D400 rated unless noted otherwise.
11. Manhole chambers 600Ø unless noted otherwise
12. Existing Phase 3 connections assumed from drawing Main Hospital - Level 1 - Ground Floor. Basement position estimated from drawing Main Hospital - Level 1 - Ground Floor and accompanying site visit.
13. Phase 2 foul pipes downstream of Phase 2 manholes to be 150Ø. Foul pipes below slab to be 100Ø.
14. Phase 2 surface water pipes to be 150Ø.

Key to symbols

- Existing Foul Drainage
- Existing Surface Water Drainage
- Existing Assumed Surface Water Drainage
- Existing Assumed Foul Drainage
- Existing Gully
- Proposed Surface Water Drainage
- Proposed Foul Water Drainage
- Proposed Foul Water Drainage (underslung in basement)
- Proposed Road Gully
- Proposed Backdrop (BD)
- Proposed Ground Slab Reinstatement
- Existing Assumed Phase 3 Connections
- Abandoned Sewer

Reference drawings

MMD-397596-00-XX-DR-C-0026 Proposed Phase 1 Drainage Masterplan
MMD-397596-00-XX-DR-C-0029 Proposed Drainage Construction Details
MMB-BH5132-TS Barnsley Hospital Topographic & Utility Survey
854-19 - ED CAU, Barnsley - Level 0 Loaded Plan To World Coordinates
85419-DAY-02-00-DR-A-52-0101_P1 - Proposed EDCA Pop-up Locations
BAU-MMD-00-00-DR-M-5201 Phase 2 Above Ground Drainage Services Layout
BAU-MMD-00-00-DR-M-5202 Phase 3 Above Ground Drainage Services Layout
BAU-MMD-V1-SS-M3-S-0001 Structural Plan - Foundation Plan
Main Hospital - Level 0 - Basement
Main Hospital - Level 1 - Ground Floor

RESIDUAL HEALTH & SAFETY RISK ASSESSMENT

Wherever possible, risk is designed-out of this proposal during the design process. Where this is not possible, the risk will be minimised and any residual significant risk will be noted and indicated by the symbol.

1. Exposure to live foul sewer
2. Deep excavation
3. Existing services (omitted for clarity)

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	13.09.19	JLW	Issued for Tender	AJP	JRK

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Client

Barnsley Hospital
Gawber Road
Barnsley

S75 2EP

Title

Barnsley Hospital CAU Phase 2 & 3

Drainage Masterplan

Designed	J Lea-Wilson	JLW	Eng check	A Precious	AJP
Drawn	J Lea-Wilson	JLW	Coordination	J Kirkham	JRK
Dwg check	A Precious	AJP	Approved	J Kirkham	JRK

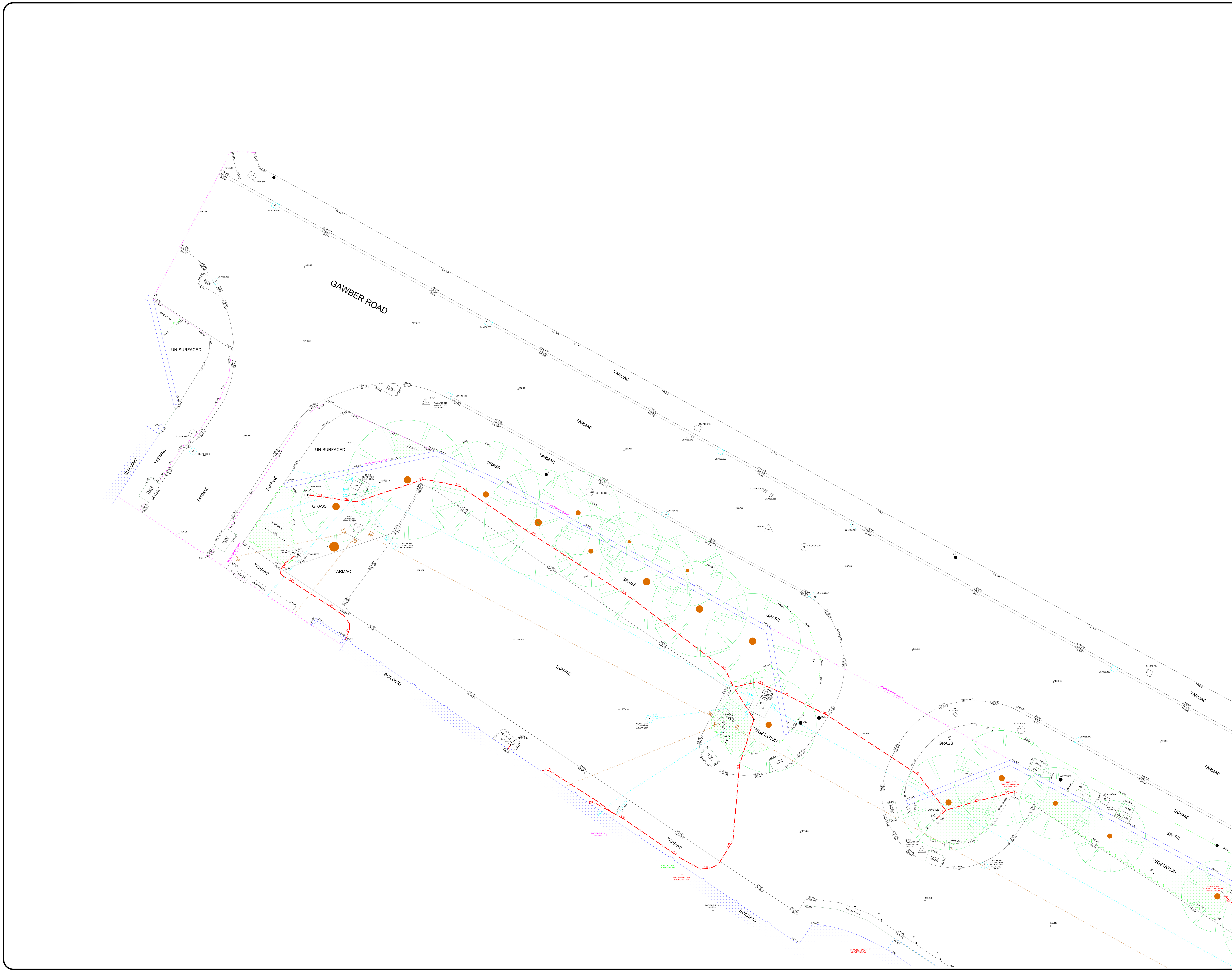
Scale at A1	Status	Rev	Security
1:200	PRE	P1	STD

Drawing Number
MMD-397596-00-XX-DR-C-0028

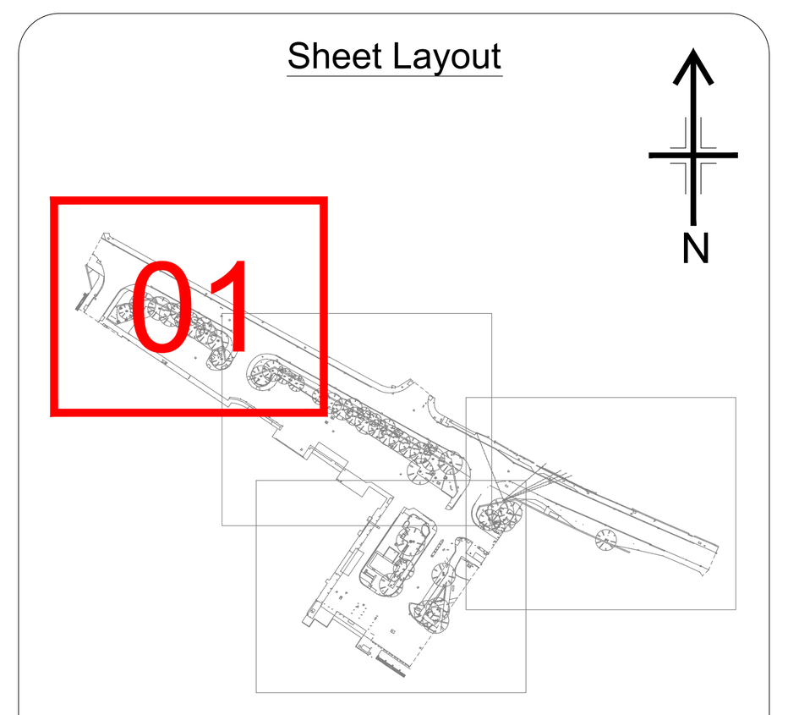
P:\Sheffield\397596 Barnsley Hospital CAU\Current Master Drawings\Highways\Drawings\MMD-397596-00-XX-DR-C-0026&0028.dwg Sep 13, 2019 - 11:23AM LEA75161

B. Topographical & Utility Survey

- MMB-BH5132-TS-01 Barnsley Hospital Topographical & Utility Survey (Sheet 1 of 4)
- MMB-BH5132-TS-02 Barnsley Hospital Topographical & Utility Survey (Sheet 2 of 4)
- MMB-BH5132-TS-03 Barnsley Hospital Topographical & Utility Survey (Sheet 3 of 4)
- MMB-BH5132-TS-04 Barnsley Hospital Topographical & Utility Survey (Sheet 4 of 4)



Sheet Layout



Topographic Abbreviations

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BS Bus Stop
BT BT Inspection Cover
C Combined (Sewer)
C&W Cable & Wireless
CA Camera
CAJB Cable Junction Box
CATV Cable Inspection Cover
CB Control Box
CC Comms Cabinet
CCTV Close Circuit Television
CD Cable Duct
CG Cattle Grid
CH Coal Hole
CIP Cable Inspection Point
CL Cover Level
COL Column
Conc Concrete
CP Catch Pit
D Depth
DK Drop Kerb
DPC Damp Proof Course
EB Electricity Control Box
EJB Electricity Junction Box
EL Eave Level
ELEC Electricity Inspection Cover
EM Electricity Meter
EP Electricity Pylon/Pole
ER Earth Rod
F Foul (Sewer)
FB Flower Bed
FC Fuel Cover
FH Fire Hydrant
FL Floor Level
FLT Flood Light
FO Fibre Optic
FP Footpath
FRL Flat Roof Level
G Gully
GAS Gas Inspection Cover
GJB Gas Junction Box
GM Gas Meter
GP Gate Post
GV Gas Vent
HL Head Level
IC Inspection Cover
IL Invert Level
JB Junction Box
KO Kerb Outlet
LB Litter Bin
LP Lamp Post
MH Man Hole
MK Service Marker
MT Mercury Telephone Cover
OSBM Ordnance Survey Benchmark
P Post
PB Post Box
PCP Pedestrian Control Point
PLT Planter
PM Parking Meter
PPL Parapet Level
PU Pump
RE Rodding Eye
RL Ridge Level
RS Road Sign
RW Retaining Wall
RWC Rain Water Channel
RWP Rain Water Pipe
S Storm (Sewer)
S/A Soakaway
Sap Sapling
SB Sliding Bollard
SC Water Stop Cock
SD Service Duct
SEG Side Entry Gully
SL Sill Level
SP Sign Post
ST Stay Cable
SV Stop Valve
SVP Soil Vent Pipe
SW Stone Wall
TB Telephone Call Box
TBM Temporary Bench Mark
TC Traffic Control Inspection Cover
TH Trial Hole
THL Threshold Level
TIC Telephone Inspection Cover
TJB Telephone Junction Box
TL Traffic Light
TMC Tarmac
TOW Top of Wall
TP Telegraph Pole
TS Tree Stump
UTL Unable To Lift
VP Vent Pipe
WL Water Level
WM Water Meter
WO Wash Out
WP Waste Pipe
WTR Water Inspection Cover

Topographic Legend

Gate
Paving
Bottom Of Batter
Top Of Batter
Building/Wall
Drip/Vegetative Line
Slab/concrete
Slope of batter
Kerb
Pipes
Fencelines
Vegetative Border
Railing
Pin Kerb
Overhead Power Line
Building Canopy
Grass Edge
Contour With Level
Edge of Hardstanding
Bore Hole
Tree
Bush
Survey Station
Photograph Origin

Utility Abbreviations

AR ASSUMED ROUTE
D.O.C DEPTH OF COVER
D.T.B DEPTH TO BOTTOM
D.T.S DEPTH TO SILT
D.T.W DEPTH TO WATER
EOS END OF SONDE
EOT END OF TRACE
EUD EMPTY UTILITY DUCT
M.A.R MAN ACCESS REQUIRED
NVP NO VISIBLE PIPE
NVV NO VISIBLE VALVE
TFR TAKEN FROM RECORDS
TLS TRAFFIC LIGHT SENSOR
UTGA UNABLE TO GAIN ACCESS
UTL UNABLE TO LIFT
UTS UNABLE TO SONDE
UTT UNABLE TO TRACE

Utility Legend

FUEL LINE - PETROL
FUEL LINE - DIESEL, KERO OR PARAFFIN
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HIGH VOLTAGE ELECTRICITY CABLE
WATER SUPPLY PIPE
GAS
TELECOM CABLE
BT CABLE
CABLE TELEVISION
FIBRE OPTICS
CATHODIC PROTECTION
EARTH TAPE
HEATING PIPES
SURFACE WATER DRAIN
FOUL WATER DRAIN
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REMEDIATION PIPES
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Report Photos

Notes

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Reference Material

THIS DRAWING HAS BEEN PRODUCED WITH REFERENCE TO STATUTORY AUTHORITY PLANS

Rev	Details	Name	Date

Client: **Mott Macdonald**
4th Floor
Derwent House
150 Arundel Gate, Sheffield
S1 2JY

Project: Barnsley Hospital
Gawber Rd
Barnsley, S75 2PY

Title: Barnsley Hospital
Topographic & Utility Survey
(Sheet 1 of 4)

Surveyed:	CS, JB, MT	CAD:	CS, MT
Chk'd:	ABR	App'd:	JG
Date:	13.02.19	Scale:	1:100@A0

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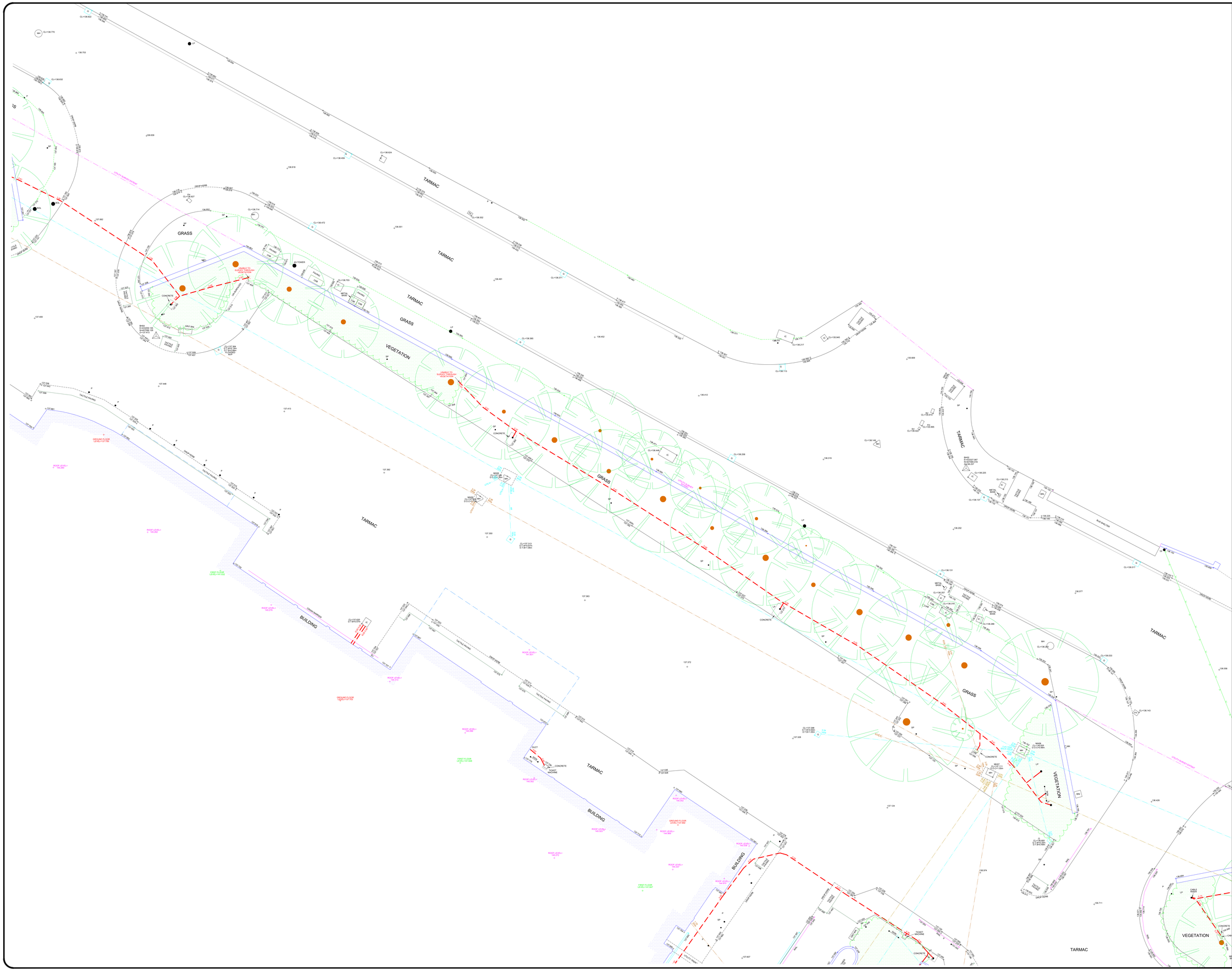
No. MMB-BH5132-TS-01 Rev: -



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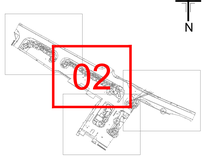

Topographic Abbreviations

AV	Air Vent	IL	Invert Level
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BK	Brick	LB	Litter Bin
BL	Base/Bed Level	LP	Lamp Post
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BR	Bike Rack	OSBM	Ordnance Survey Benchmark
BS	Bus Stop	P	Post
BT	BT Inspection Cover	PB	Post Box
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ELEC	Electricity Inspection Cover	SVP	Soil Vent Pipe
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FC	Fuel Cover	THL	Threshold Level
FH	Fire Hydrant	TIC	Telephone Inspection Cover
FL	Floor Level	TJB	Telephone Junction Box
FLT	Flood Light	TL	Traffic Light
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FP	Footpath	TOW	Top of Wall
FRL	Flat Roof Level	TP	Telegraph Pole
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GAS	Gas Inspection Cover	UTL	Unable To Lift
GJB	Gas Junction Box	VP	Vent Pipe
GM	Gas Meter	WL	Water Level
GP	Gate Post	WM	Water Meter
GV	Gas Vent	WO	Wash Out
HL	Head Level	WPC	Water Pipe
IC	Inspection Cover	WTIC	Water Inspection Cover

Topographic Legend

- Gate
- Paving
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- Top Of Batter
- Building/Wall
- Drip/Vegetative Line
- Slab/concrete
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- Edge of Hardstanding
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- Photograph Origin

Utility Abbreviations

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D.T.W	DEPTH TO WATER	UTL	UNABLE TO LIFT
E.O.R	END OF RUN	UTS	UNABLE TO SONDE
EOT	END OF TRACE	UTT	UNABLE TO TRACE
EUD	EMPTY UTILITY DUCT		
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Rev	Details	Name	Date

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4th Floor
Derwent House
150 Arundel Gate, Sheffield
S1 2JY

Project: Barnsley Hospital
Gawber Rd
Barnsley, S75 2PY

Title: Barnsley Hospital
Topographic & Utility Survey
(Sheet 2 of 4)

Surveyed:	CS, JB, MT	CAD:	CS, MT
Chk'd:	ABR	App'd:	JG
Date:	13.02.19	Scale:	1:100@A0

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The Old Pop Factory
88-90 High Street
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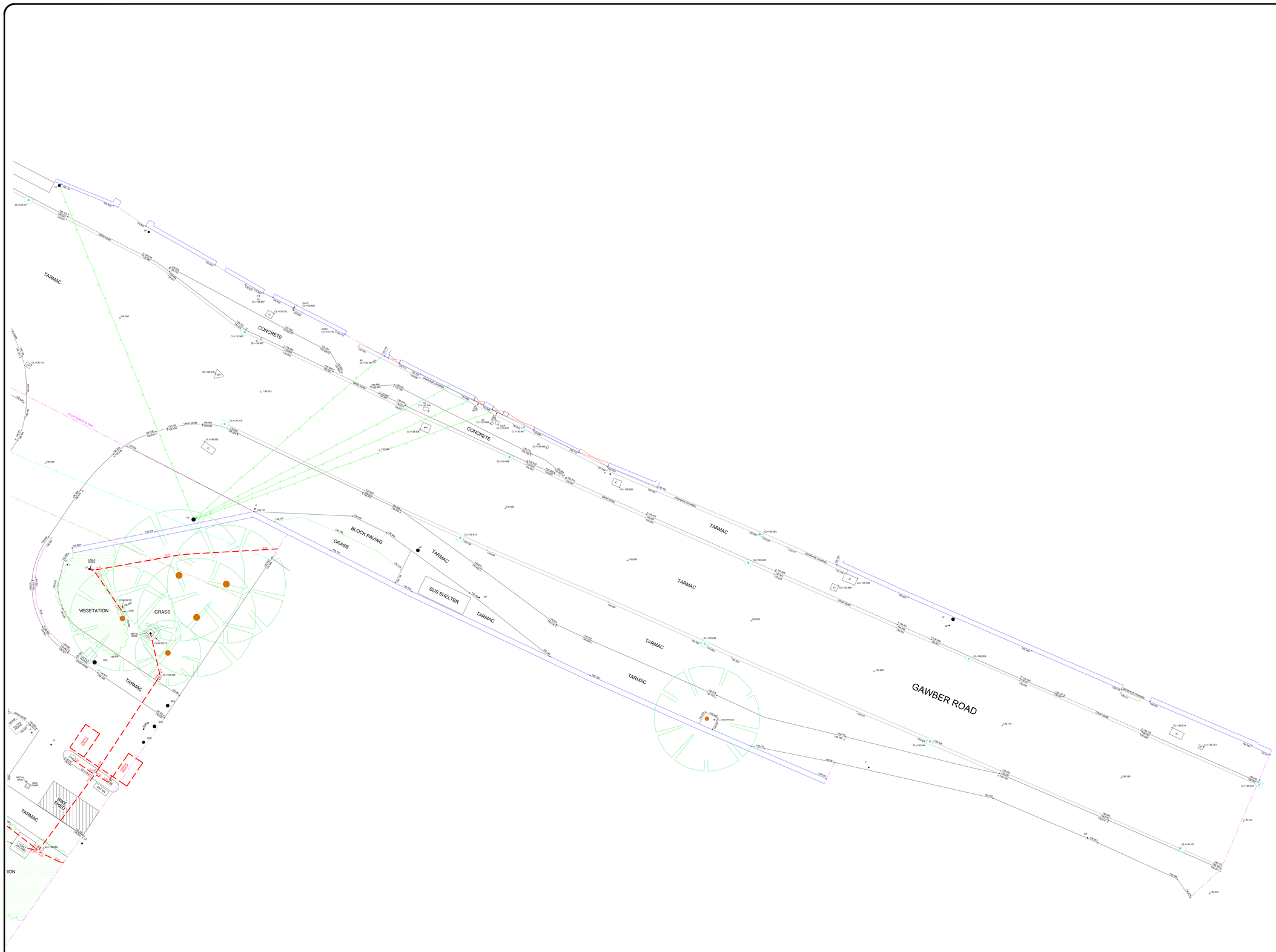
www.1stHorizon.uk
info@1stHorizon.co.uk

No. MMB-BH5132-TS-02 | Rev: –



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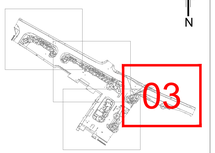

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GV	Gas Vent	WO	Wash Out
HL	Head Level	WPC	Water Pipe
IC	Inspection Cover	WTIC	Water Inspection Cover

Topographic Legend

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- Paving
- Bottom Of Batter
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- Drip/Vegetative Line
- Slab/concrete
- Slope of batter
- Kerb
- Pipes
- Fencelines
- Vegetative Border
- Railing
- Pin Kerb
- Overhead Power Line
- Building Canopy
- Grass Edge
- Contour With Level
- Edge of Hardstanding
- Bore Hole
- Tree
- Bush
- Survey Station
- Photograph Origin

Utility Abbreviations

AR	ASSUMED ROUTE	NVV	NO VISIBLE VALVE
D.O.C	DEPTH OF COVER	TFR	TAKEN FROM RECORDS
D.T.B	DEPTH TO BOTTOM	TLS	TRAFFIC LIGHT SENSOR
D.T.S	DEPTH TO SILT	UNA	UNABLE TO GAIN ACCESS
D.T.W	DEPTH TO WATER	UTL	UNABLE TO LIFT
EOB	END OF SONDE	UTS	UNABLE TO SONDE
EOT	END OF TRACE	UTT	UNABLE TO TRACE
EUC	EMPTY UTILITY DUCT		
M.A.R	MAN ACCESS REQUIRED		
NVP	NO VISIBLE PIPE		

Utility Legend

- FUEL LINE - PETROL
- FUEL LINE - DIESEL, KERO OR PARAFFIN
- ELECTRICITY CABLE
- HIGH VOLTAGE ELECTRICITY CABLE
- WATER SUPPLY PIPE
- GAS
- TELECOM CABLE
- BT CABLE
- CABLE TELEVISION
- FIBRE OPTICS
- CATHODIC PROTECTION
- EARTH TAPE
- HEATING PIPES
- SURFACE WATER DRAIN
- FOUL WATER DRAIN
- COMBINED DRAIN
- UNIDENTIFIED (LOCATED USING GPR) - SEE NOTES
- UNIDENTIFIED (LOCATED BY INDUCTION) - SEE NOTES
- UNIDENTIFIED (LOCATED BY RADIO) - SEE NOTES
- UNIDENTIFIED PIPELINE
- GAS GAUGE LINE OR COMMS CABLE
- DRY LAID FILL
- VENT PIPE
- OIL PIPE
- REMEDIATION PIPES
- VAPOR RECOVERY
- SURVEY EXTENTS BOUNDARY LINE
- END OF TRACE/SONDE

Chamber Extents

Report Photos

Notes

THE ACCURACY OF BOTH THE RADIO DETECTION EQUIPMENT AND THE GROUND PENETRATING RADAR, CAN ONLY BE ASSUMED TO BE +/-15% OF THE LOCATED DEPTH. FOR BOTH X,Y AND Z HEIGHT INFORMATION.

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Reference Material

THIS DRAWING HAS BEEN PRODUCED WITH REFERENCE TO STATUTORY AUTHORITY PLANS

Rev	Details	Name	Date

Client: **Mott Macdonald**
4th Floor
Derwent House
150 Arundel Gate, Sheffield
S1 2JY

Project: Barnsley Hospital
Gawber Rd
Barnsley, S75 2PY

Title: Barnsley Hospital
Topographic & Utility Survey
(Sheet 3 of 4)

Surveyed:	CS, JB, MT	CAD:	CS, MT
Ch'k'd:	ABR	App'd:	JG
Date:	13.02.19	Scale:	1:100@A0

1ST HORIZON
1st Horizon Surveying and Engineering Ltd.
The Old Pop Factory
88-90 High Street
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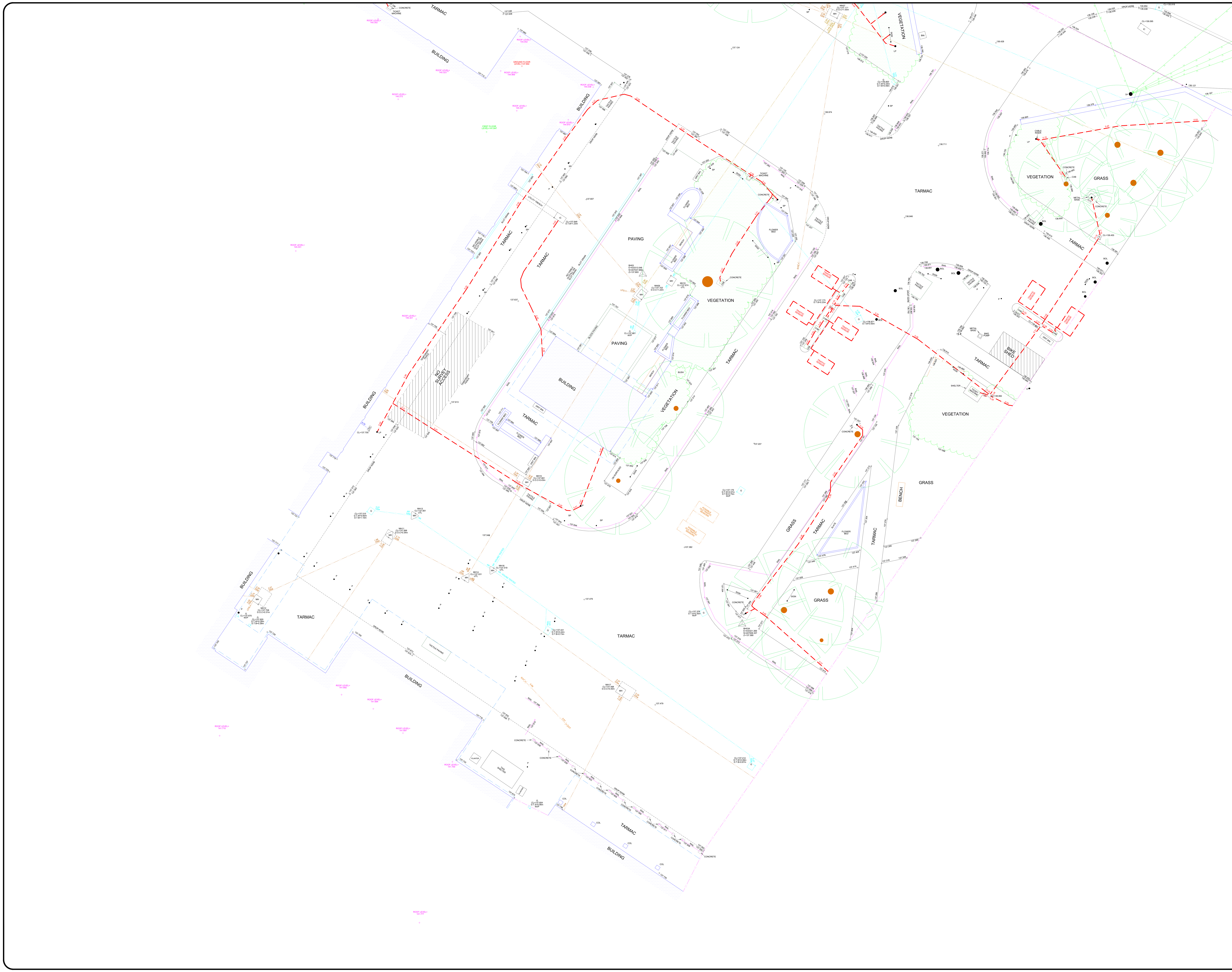
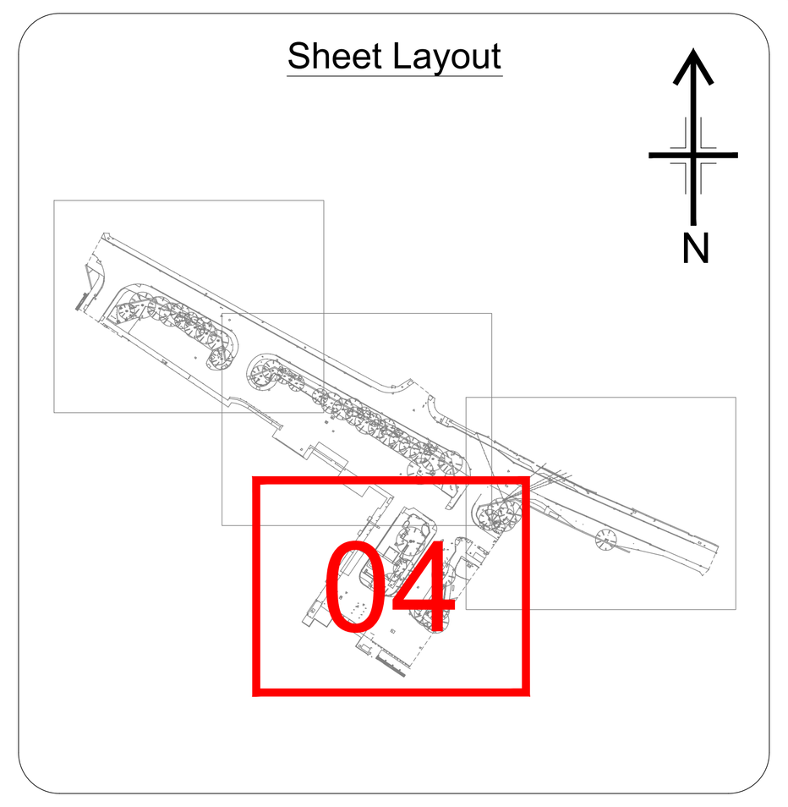
Fax: +44 (0)1226 766 317
www.1sth.co.uk
info@1sth.co.uk

No. MMB-BH5132-TS-03 Rev: -



Sheet Layout



Topographic Abbreviations

AV Air Vent
BB Belisha Beacon
BD Back Drop
BK Brick
BL Base/Bed Level
BOL Bollard
BP Brick Pillar
BPV Brick Paviour
BR Bike Rack
BS Bus Stop
BT BT Inspection Cover
C Combined (Sewer)
C&W Cable & Wireless
CA Camera
CAJB Cable Junction Box
CATV Cable Inspection Cover
CB Control Box
CC Comms Cabinet
CCTV Close Circuit Television
CD Cable Duct
CG Cattle Grid
CH Coal Hole
CIP Cable Inspection Point
CL Cover Level
COL Column
Conc Concrete
CP Catch Pit
D Depth
DK Drop Kerb
DPC Damp Proof Course
EB Electricity Control Box
EJB Electricity Junction Box
EL Eave Level
ELEC Electricity Inspection Cover
EM Electricity Meter
EP Electricity Pylon/Pole
ER Earth Rod
F Foul (Sewer)
FB Flower Bed
FC Fuel Cover
FH Fire Hydrant
FL Floor Level
FLT Flood Light
FO Fibre Optic
FP Footpath
FRL Flat Roof Level
G Gully
GAS Gas Inspection Cover
GJB Gas Junction Box
GM Gas Meter
GP Gate Post
GV Gas Vent
HL Head Level
IC Inspection Cover
IL Invert Level
JB Junction Box
KO Kerb Outlet
LB Litter Bin
LP Lamp Post
MH Man Hole
MK Service Marker
MT Mercury Telephone Cover
OSBM Ordnance Survey Benchmark
P Post
PB Post Box
PCP Pedestrian Control Point
PLT Planter
PM Parking Meter
PPL Parapet Level
PU Pump
RE Rodding Eye
RL Ridge Level
RS Road Sign
RW Retaining Wall
RWC Rain Water Channel
RWP Rain Water Pipe
S Storm (Sewer)
S/A Soakaway
Sap Sapling
SB Sliding Bollard
SC Water Stop Cock
SD Service Duct
SEG Side Entry Gully
SL Sill Level
SP Sign Post
ST Stay Cable
SV Stop Valve
SVP Soil Vent Pipe
SW Stone Wall
TB Telephone Call Box
TBM Temporary Bench Mark
TC Traffic Control Inspection Cover
TH Trial Hole
THL Threshold Level
TIC Telephone Inspection Cover
TJB Telephone Junction Box
TL Traffic Light
TMC Tarmac
TOW Top of Wall
TP Telegraph Pole
TS Tree Stump
UTL Unable To Lift
VP Vent Pipe
WL Water Level
WM Water Meter
WO Wash Out
WP Waste Pipe
WTR Water Inspection Cover

Topographic Legend

Gate
Paving
Bottom Of Batter
Top Of Batter
Building/Wall
Drip/Vegetative Line
Slab/concrete
Slope of batter
Kerb
Pipes
Fencelines
Vegetative Border
Railing
Pin Kerb
Overhead Power Line
Building Canopy
Grass Edge
Contour With Level
Edge of Hardstanding
Bore Hole
Tree
Bush
Survey Station
Photograph Origin

Utility Abbreviations

AR ASSUMED ROUTE
D.O.C DEPTH OF COVER
D.T.B DEPTH TO BOTTOM
D.T.S DEPTH TO SILT
D.T.W DEPTH TO WATER
EOS END OF SONDE
EOT END OF TRACE
EUD EMPTY UTILITY DUCT
M.A.R MAN ACCESS REQUIRED
NVP NO VISIBLE PIPE
NVV NO VISIBLE VALVE
TFR TAKEN FROM RECORDS
TLS TRAFFIC LIGHT SENSOR
UTGA UNABLE TO GAIN ACCESS
UTL UNABLE TO LIFT
UTS UNABLE TO SONDE
UTT UNABLE TO TRACE

Utility Legend

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UNIDENTIFIED PIPELINE
TANK GAUGE LINE OR COMMS CABLE
OFF-SET FILL
VENT PIPE
OIL PIPE
REMEDIATION PIPES
VAPOR RECOVERY
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Report Photos

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4th Floor
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S1 2JY

Project: Barnsley Hospital
Gawber Rd
Barnsley, S75 2PY

Title: Barnsley Hospital
Topographic & Utility Survey
(Sheet 4 of 4)

Surveyed:	CS, JB, MT	CAD:	CS, MT
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www.1sth.co.uk
info@1sth.co.uk

No. MMB-BH5132-TS-04 Rev: -

C. CCTV Survey

- 1st Horizon – CCTV Survey Report 28.01.2019
- MMD-BH5132-01 Barnsley Hospital CCTV Survey (Sheet 1 of 3)
- MMD-BH5132-01 Barnsley Hospital CCTV Survey (Sheet 2 of 3)
- MMD-BH5132-01 Barnsley Hospital CCTV Survey (Sheet 3 of 3)

Drainage Report

Prepared For

Jon Svikis
Derwent House 150 Arundel Gate
Sheffield
Yorkshire
S1 2JY

Site

Alison Fearns
Barnsley Hospital, Gawber Road
Barnsley
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S75 2EP

MOTT MACDONALD

1ST HORIZON SURVEYING & ENGINEERING
JORDAN BECKETT
JORDANBECKETT@1STH.CO.UK
01226766446

Total Defects for Project

6 3 57 13 0

Total DRB Grades for Project

12 20 8

Barnsley Hospital - CCTV Survey Report : 28/01/19

Name :	1ST HORIZON SURVEYING & ENGINEERING
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Surveyor :	JORDAN BECKETT
Valid Certification No :	

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Mobile :	
Email :	jonathan.svikis@mottmac.com
Fax :	

Site Information

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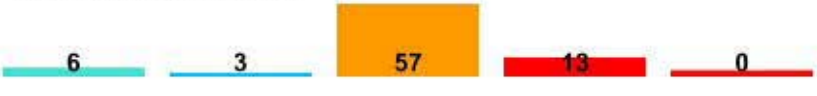
Region :	Yorkshire
Postcode :	S75 2EP
Tel :	
Mobile :	07800550897
Email :	alison.fearns@nhs.net
Fax :	

Total Defects for Project



Total DRB Grades for Project

Report interpretation.

Overview:

Each section of the drainage system is allocated a score indicating areas that require attention. These areas are detailed in the Overview section on the following page and also at the bottom right of the first few pages. We use colour coding as an indicator of severity. Additional information concerning rehabilitation options/recomendations is included in the Overview page, which can also be used as an, "at a glance" indication of system condition. More in depth information for each section, Including images can be found later in the report. Grade indicators are as follows:

Grade A: Drain is serviceable no recommendations required

Grade B: There is an issue that might require remedial works

Grade C: There is a defect that requires remedial works, the drain is not serviceable.

Observations:

Each section of drainage reported on (manhole to manhole for example), contains detailed information about that drain and any observations made concerning condition are detailed below the header section. The observations are colour coded and given a severity score, with more significant defects being given a higher score, using a scale from 1 to 5 as detailed below:

Severity 1 to 2: These defects may require remedial monitoring

Severity 3: These defects probably require some form of remedial works

Severity 4 to 5: Defects that will require remedial repair or replacement

General:

The information provided is relevant at the time of survey. The coding system in this report is based on the Manual of Sewer Condition Classification, 5th edition (MSCC5) domestic codes (BS EN 13508-1:2003). This is the official standard for the water industry.

The severity system is based on significant experience in general practice and the 1 -5 grades represent the severity of individual defects: 5 representing a more serious defect.

Please feel free to contact us for further explanation or pricing for remedial works required.

Total Defects for Project

Total DRB Grades for Project

Overview

Section: 1 **From: MH01** **To: SA**	Grade C	**DRB Grade: C** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 2 **From: MH01** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 3 **From: MH01** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 4 **From: MH02** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 5 **From: MH02** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 6 **From: MH02** **To: SA**	LATA	**DRB Grade: B** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 7 **From: MH02** **To: GULLY**	Grade B	**DRB Grade: B** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 8 **From: MH02** **To: GULLY**	Grade B	**DRB Grade: B** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**

Total Defects for Project

Total DRB Grades for Project

Section: 9 **From: MH03** **To: BUILDING**	Grade B	**DRB Grade: B** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 10 **From: MH03** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 11 **From: MH03** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 12 **From: MH04** **To: SA**	Grade A	**DRB Grade: A** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 13 **From: MH04** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 14 **From: MH04** **To: LATA**	Grade B	**DRB Grade: B** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 15 **From: MH04** **To: LATB**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 16 **From: MH06** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 17 **From: MH06** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**

Total Defects for Project

Total DRB Grades for Project

Section: 18 **From: MH07** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Combined**
Section: 19 **From: MH07** **To: LATA**	Grade C	**DRB Grade: C** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 20 **From: MH07** **To: LATB**	Grade C	**DRB Grade: C** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 21 **From: MH07** **To: LATC**	Grade C	**DRB Grade: C** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 22 **From: MH08** **To: SA**	Grade A	**DRB Grade: A** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 23 **From: MH08** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 24 **From: MH08** **To: MH10**	Grade A	**DRB Grade: A** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 25 **From: MH08** **To: LATA**	Grade C	**DRB Grade: C** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**

Total Defects for Project

Total DRB Grades for Project

Section: 26 **From: MH08** **To: LATB**	Grade B	**DRB Grade: B** **Pipe Size: 100** **Material: Polyvinyl Chloride** **Use: Surface Water**
Section: 27 **From: MH09** **To: MH07**	Grade A	**DRB Grade: A** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Combined**
Section: 28 **From: MH09** **To: LATA**	Grade C	**DRB Grade: C** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 29 **From: MH09** **To: LATC**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Surface Water**
Section: 30 **From: MH09** **To: MH15**	Grade A	**DRB Grade: A** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 31 **From: MH11** **To: MH12**	Grade A	**DRB Grade: A** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 32 **From: MH11** **To: MH14**	Grade A	**DRB Grade: A** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 33 **From: MH11** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 34 **From: MH12** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 100** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**

Total Defects for Project

Total DRB Grades for Project

Section: 35 **From: MH15** **To: LATA**	Grade C	**DRB Grade: C** **Pipe Size: 150** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 36 **From: MH15** **To: MH14**	Grade A	**DRB Grade: A** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 37 **From: MH15** **To: SA**	Grade A	**DRB Grade: A** **Pipe Size: 300** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 38 **From: MH17** **To: SA**	Grade B	**DRB Grade: B** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 39 **From: MH17** **To: MH14**	Grade A	**DRB Grade: A** **Pipe Size: 225** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**
Section: 40 **From: MH17** **To: LATA**	Grade C	**DRB Grade: C** **Pipe Size: 150** **Material: Vitrified Clay (i.e. all clayware)** **Use: Foul**

Site: Gawber Road , Barnsley

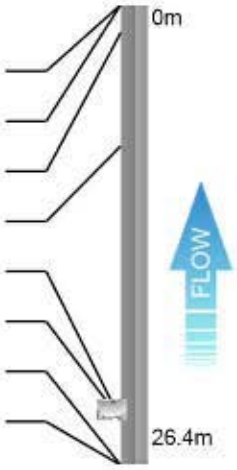
Section 1

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH01	Finish Node Ref:	SA	Direction:	U	Height/Dia:	300
Start Node Depth:	2.23	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	26.4	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
01.60m	JDM	Joint displaced medium		0_2	0:00:27
08.10m	JDM	Joint displaced medium		0_3	0:00:42
23.80m	DEE	Attached deposits, encrustation 12-06 10%		0_4	0:01:38
23.80m	JN	Junction 01 : 50mm Diameter		0_5	0:01:39
26.40m	D	Deformed drain/sewer 10%		0_6	0:02:14
26.40m	SA	Survey abandoned			



Total Defects for section

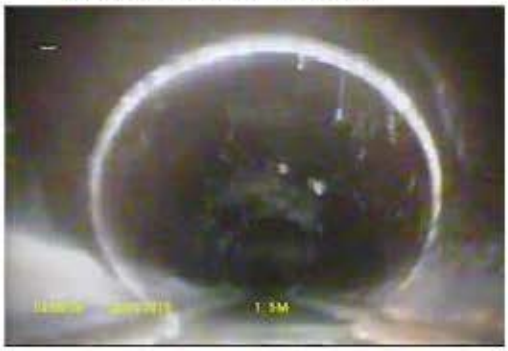
0 0 3 1 0

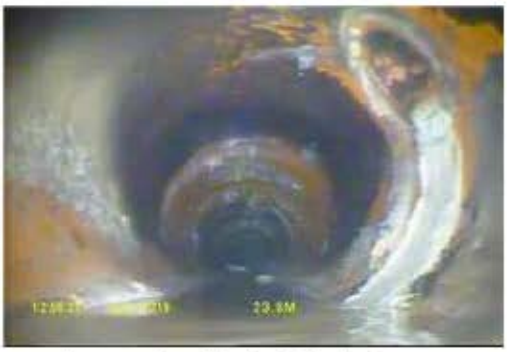
DRB Grade for Section

C

Descriptive Report with Remarks and Observation Images

Section 1

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH01	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.60m	0:00:27	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 0_2 
08.10m	0:00:42	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 0_3 
23.80m	0:01:38	DEE	Attached deposits, encrustation from 12 o'clock to 06 o'clock: 10% Cross sectional area loss - Severity 3	Image Provided - Ref: 0_4 

Pos	Video Ref	Code	Description	Image
23.80m	0:01:39	JN	Junction at 01 o'clock: 50mm Diameter	Image Provided - Ref: 0_5 
26.40m	0:02:14	D	Deformed drain/sewer: 10% Height/Diameter - Severity 4	Image Provided - Ref: 0_6 
26.40m		SA	Survey abandoned Unable to pass deformed pipe.	

Total Defects for section

0 0 3 1 0

DRB Grade for Section

C

Site: Gawber Road , Barnsley

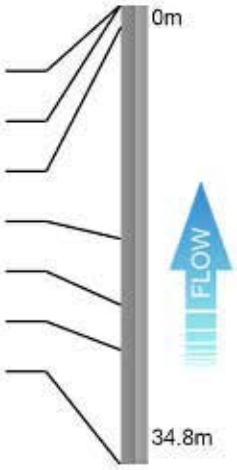
Section 2

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH01	Finish Node Ref:	SA	Direction:	U	Height/Dia:	225
Start Node Depth:	2.20	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	34.8	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
01.70m	JDM	Joint displaced medium		1_2	0:00:18
17.70m	WL	S1 Water level 20%	S1	1_3	0:00:56
22.70m	JDM	Joint displaced medium		1_4	0:01:15
26.10m	JDM	Joint displaced medium		1_5	0:01:25
34.80m	SA	Survey abandoned			



Total Defects for section

0 0 3 0 0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 2

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH01	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.70m	0:00:18	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 1_2 
17.70m	0:00:56	S1 WL	Water level 17.7m - 34.8m: 20% Height/Diameter	Image Provided - Ref: 1_3 
22.70m	0:01:15	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 1_4 

Pos	Video Ref	Code	Description	Image
26.10m	0:01:25	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 1_5 
34.80m		SA	Survey abandoned Survey abandoned.	

Site: Gawber Road , Barnsley

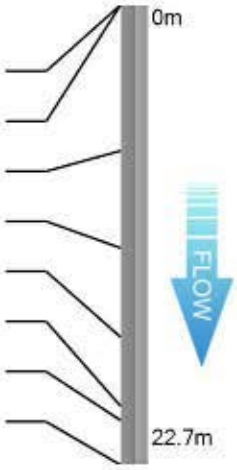
Section 3

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH01	Finish Node Ref:	SA	Direction:	D	Height/Dia:	300
Start Node Depth:	2.42	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	22.7	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
07.20m	WL	S1 Water level 20%	S1		0:00:33
12.00m	JDM	Joint displaced medium		2_3	0:00:43
16.40m	JDM	Joint displaced medium		2_4	0:00:58
19.80m	JDM	Joint displaced medium		2_5	0:01:34
20.50m	JDM	Joint displaced medium		2_6	0:02:17
22.70m	SA	Survey abandoned			



Total Defects for section

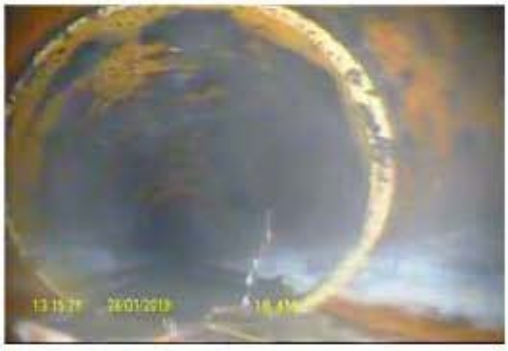
0	0	4	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 3

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH01	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
07.20m	0:00:33	S1 WL	Water level 7.2m - 11.3m: 20% Height/Diameter	
12.00m	0:00:43	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 2_3 
16.40m	0:00:58	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 2_4 
19.80m	0:01:34	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 2_5 

Pos	Video Ref	Code	Description	Image
20.50m	0:02:17	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 2_6 
22.70m		SA	Survey abandoned SA	

Site: Gawber Road , Barnsley

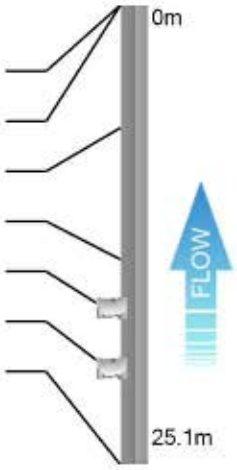
Section 4

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH02	Finish Node Ref:	SA	Direction:	U	Height/Dia:	300
Start Node Depth:	1.21	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	25.1	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
06.70m	JDM	Joint displaced medium		3_2	0:00:33
13.90m	JDM	Joint displaced medium		3_3	0:01:04
17.10m	JN	Junction 03 : 100mm Diameter		3_4	0:01:16
20.40m	JN	Junction 02 : 100mm Diameter		3_5	0:01:35
25.10m	MHF	Finish node type, manhole			



Total Defects for section

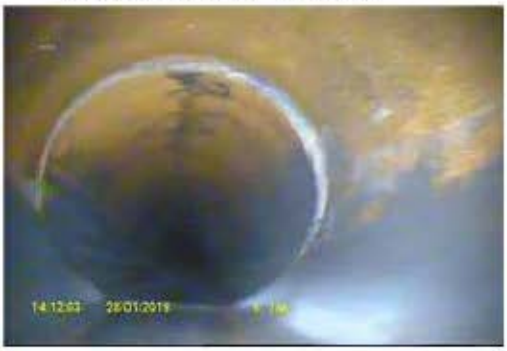
0 0 2 0 0

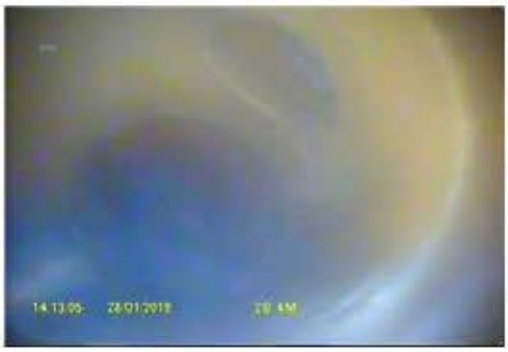
DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 4

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH02	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
06.70m	0:00:33	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 3_2 
13.90m	0:01:04	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 3_3 
17.10m	0:01:16	JN	Junction at 03 o'clock: 100mm Diameter	Image Provided - Ref: 3_4 

Pos	Video Ref	Code	Description	Image
20.40m	0:01:35	JN	Junction at 02 o'clock: 100mm Diameter	Image Provided - Ref: 3_5 
25.10m		MHF	Finish node type, manhole Manhole out of survey area.	

Site: Gawber Road , Barnsley

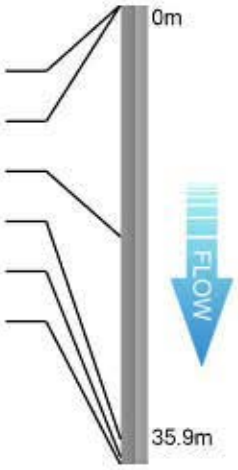
Section 5

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH02	Finish Node Ref:	SA	Direction:	D	Height/Dia:	300
Start Node Depth:	1.27	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	35.9	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
18.10m	JDM	Joint displaced medium		4_2	0:00:41
33.90m	JDM	Joint displaced medium		4_3	0:01:11
35.30m	JDM	Joint displaced medium		4_4	0:01:20
35.90m	SA	Survey abandoned			



Total Defects for section

0	0	3	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 5

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH02	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
18.10m	0:00:41	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 4_2 
33.90m	0:01:11	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 4_3 
35.30m	0:01:20	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 4_4 
35.90m		SA	Survey abandoned SA	

Site: Gawber Road , Barnsley

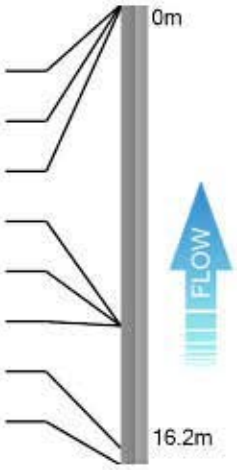
Section 6

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH02	Finish Node Ref:	SA	Direction:	U	Height/Dia:	225
Start Node Depth:	1.03	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	16.2	LATA

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
00.10m	JDM	Joint displaced medium		5_2	0:00:15
11.30m	JDM	Joint displaced medium		5_3	0:00:42
11.30m	OB	Other obstacles 30%		5_4	0:00:47
11.30m	DER	Settled deposits coarse 20%		5_5	0:00:53
15.60m	OB	Other obstacles 30%		5_6	0:01:33
16.20m	SA	Survey abandoned			



Total Defects for section

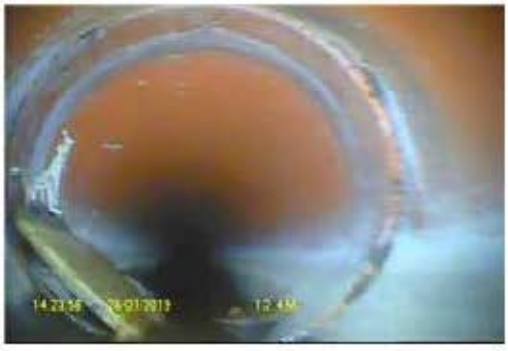
0 0 5 0 0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 6

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH02	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.10m	0:00:15	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 5_2 
11.30m	0:00:42	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 5_3 
11.30m	0:00:47	OB	Other obstacles: 30% Cross sectional area loss - Severity 3	Image Provided - Ref: 5_4 

Pos	Video Ref	Code	Description	Image
11.30m	0:00:53	DER	Settled deposits coarse: 20% Cross sectional area loss - Severity 3	Image Provided - Ref: 5_5 
15.60m	0:01:33	OB	Other obstacles: 30% Cross sectional area loss - Severity 3	Image Provided - Ref: 5_6 
16.20m		SA	Survey abandoned SA	

Site: Gawber Road , Barnsley

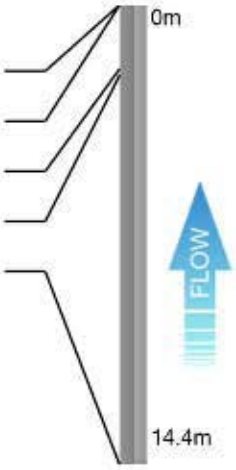
Section 7

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH02	Finish Node Ref:	GULLY	Direction:	U	Height/Dia:	100
Start Node Depth:	1.01	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	14.4	LATB

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
02.00m	LLQ	Line of drain/sewer deviates left [quarter]		6_2	0:00:14
02.20m	JDM	Joint displaced medium		6_3	0:00:27
14.40m	GYF	Finish node type Gully		6_99	



Total Defects for section

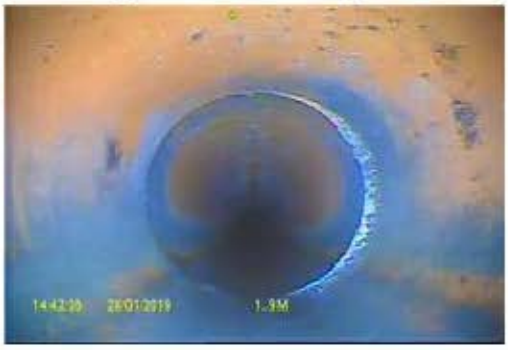
0	0	1	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 7

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH02	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
02.00m	0:00:14	LLQ	Line of drain/sewer deviates left [quarter]	Image Provided - Ref: 6_2 
02.20m	0:00:27	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 6_3 
14.40m		GYF	Finish node type Gully GULLY	Image Provided - Ref: 6_9999 

Site: Gawber Road , Barnsley

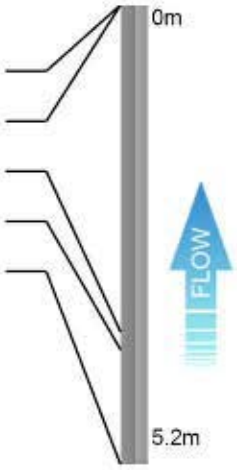
Section 8

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH02	Finish Node Ref:	GULLY	Direction:	U	Height/Dia:	100
Start Node Depth:	0.75	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	5.2	LATC

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
03.70m	JDM	Joint displaced medium		7_2	0:00:27
03.90m	LUQ	Line of drain/sewer deviates up [quarter]		7_3	0:00:28
05.20m	GYF	Finish node type Gully		7_99	



Total Defects for section

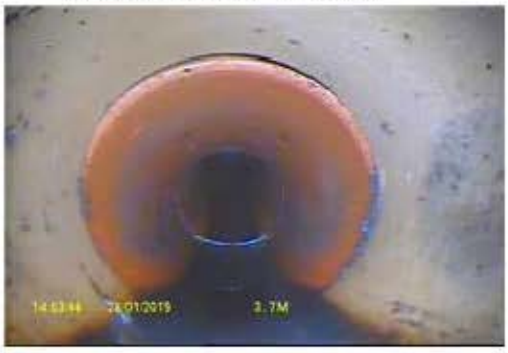
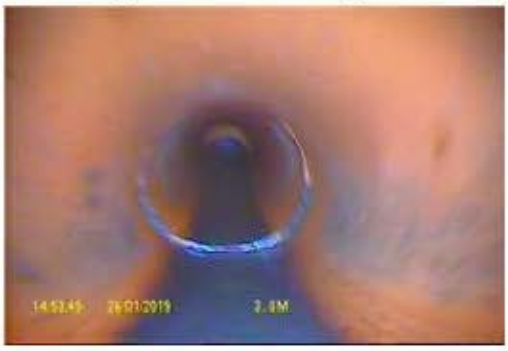
0	0	1	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 8

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH02	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
03.70m	0:00:27	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 7_2 
03.90m	0:00:28	LUQ	Line of drain/sewer deviates up [quarter]	Image Provided - Ref: 7_3 
05.20m		GYF	Finish node type Gully GULLY	Image Provided - Ref: 7_9999 

Total Defects for section

0 | 0 | 1 | 0 | 0

DRB Grade for Section

B

Site: Gawber Road , Barnsley

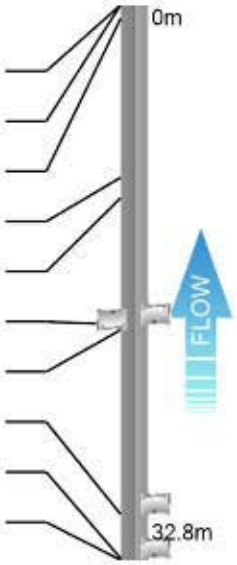
Section 9

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH03	Finish Node Ref:	BUILDING	Direction:	U	Height/Dia:	225
Start Node Depth:	2.74	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	32.8	LATA

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
00.80m	LRQ	Line of drain/sewer deviates right [quarter]		8_2	0:00:11
10.20m	JDM	Joint displaced medium		8_3	0:00:28
11.40m	LLH	Line of drain/sewer deviates left [half]		8_4	0:00:30
18.90m	JN	Junction 09 : 100mm Diameter		8_5	0:00:48
19.20m	JN	Junction 03 : 100mm Diameter		8_6	0:00:49
30.10m	JN	Junction 11 : 100mm Diameter		8_7	0:01:18
32.70m	JN	Junction 11 : 100mm Diameter		8_8	0:01:33
32.80m	SA	Survey abandoned			



Total Defects for section

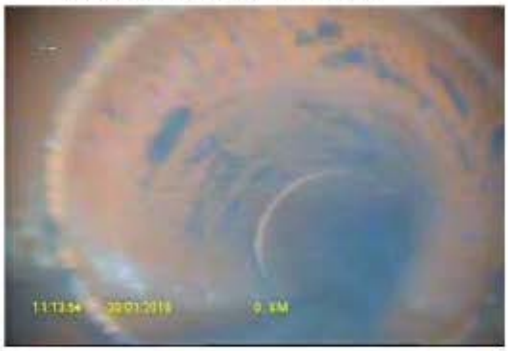
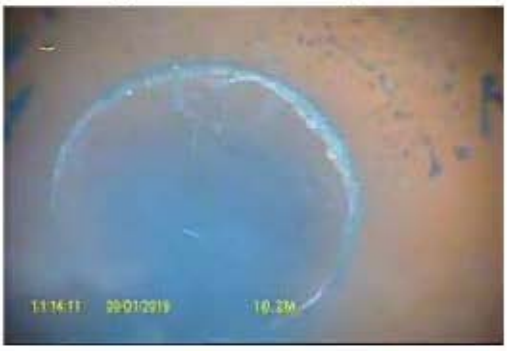
0 0 1 0 0

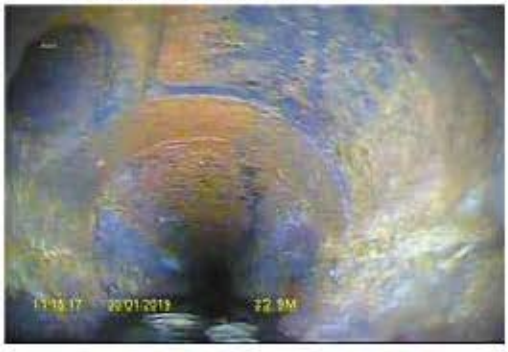
DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 9

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH03	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.80m	0:00:11	LRQ	Line of drain/sewer deviates right [quarter]	Image Provided - Ref: 8_2 
10.20m	0:00:28	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 8_3 
11.40m	0:00:30	LLH	Line of drain/sewer deviates left [half]	Image Provided - Ref: 8_4 

Pos	Video Ref	Code	Description	Image
18.90m	0:00:48	JN	Junction at 09 o'clock: 100mm x 50mm Diameter	Image Provided - Ref: 8_5 
19.20m	0:00:49	JN	Junction at 03 o'clock: 100mm Diameter	Image Provided - Ref: 8_6 
30.10m	0:01:18	JN	Junction at 11 o'clock: 100mm Diameter	Image Provided - Ref: 8_7 
32.70m	0:01:33	JN	Junction at 11 o'clock: 100mm Diameter	Image Provided - Ref: 8_8 
32.80m		SA	Survey abandoned BUILDING	

Total Defects for section

0 0 1 0 0

DRB Grade for Section

B

Site: Gawber Road , Barnsley

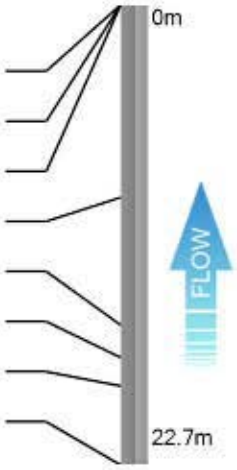
Section 10

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH03	Finish Node Ref:	SA	Direction:	U	Height/Dia:	300
Start Node Depth:	3.04	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	22.7	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
00.00m	WL	S1 Water level 40%	S1		0:02:18
09.50m	JDM	Joint displaced medium		9_2	0:00:50
15.80m	JDM	Joint displaced medium		9_3	0:01:24
17.40m	JDM	Joint displaced medium		9_4	0:01:29
18.80m	JDM	Joint displaced medium		9_5	0:01:33
22.70m	SA	Survey abandoned			



Total Defects for section

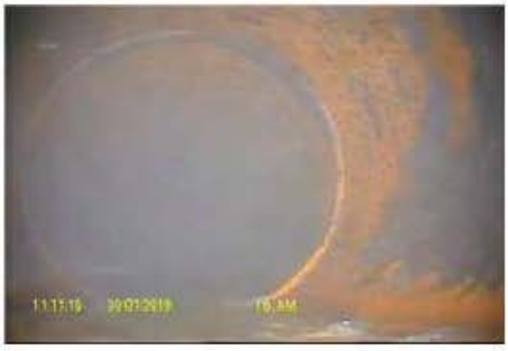
0	0	4	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 10

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH03	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
00.00m	0:02:18	S1 WL	Water level 0m - 22.7m: 40% Height/Diameter	
09.50m	0:00:50	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 9_2 
15.80m	0:01:24	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 9_3 
17.40m	0:01:29	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 9_4 

Pos	Video Ref	Code	Description	Image
18.80m	0:01:33	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 9_5 
22.70m		SA	Survey abandoned SA	

Site: Gawber Road , Barnsley

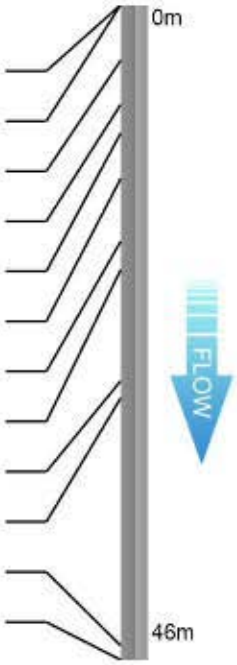
Section 11

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH03	Finish Node Ref:	SA	Direction:	D	Height/Dia:	300
Start Node Depth:	3.10	Finish Node Depth:	0.00	Use:	F	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	46	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
03.90m	JDM	Joint displaced medium		10_2	0:00:19
07.00m	CU	Loss of vision			0:00:25
09.00m	JDM	Joint displaced medium		10_4	0:00:34
12.20m	JDM	Joint displaced medium		10_5	0:00:39
16.60m	JDM	Joint displaced medium		10_6	0:00:46
18.60m	WL	S1 Water level 40%	S1		0:00:54
26.40m	CM	Cracks, multiple 12-06		10_8	0:01:04
27.60m	CM	Cracks, multiple 09-03		10_9	0:01:31
45.00m	CU	S2 Loss of vision	S2		0:02:34
46.00m	SA	Survey abandoned			



Total Defects for section

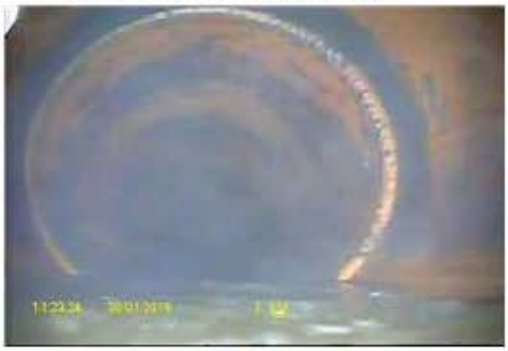
0	2	4	0	0

DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 11

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH03	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
03.90m	0:00:19	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 10_2 
07.00m	0:00:25	CU	Loss of vision	
09.00m	0:00:34	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 10_4 
12.20m	0:00:39	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 10_5 

Pos	Video Ref	Code	Description	Image
16.60m	0:00:46	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 10_6 
18.60m	0:00:54	S1 WL	Water level 18.6m - 30m: 40% Height/Diameter	
26.40m	0:01:04	CM	Cracks, multiple from 12 o'clock to 06 o'clock - Severity 2	Image Provided - Ref: 10_8 
27.60m	0:01:31	CM	Cracks, multiple from 09 o'clock to 03 o'clock - Severity 2	Image Provided - Ref: 10_9 
45.00m	0:02:34	S2 CU	Loss of vision 45m - 46m	
46.00m		SA	Survey abandoned SA	

Site: Gawber Road , Barnsley

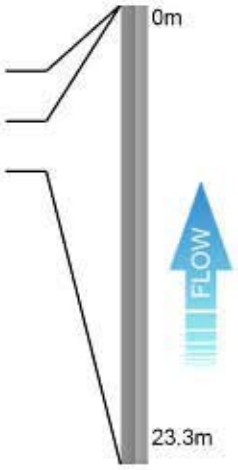
Section 12

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH04	Finish Node Ref:	SA	Direction:	U	Height/Dia:	300
Start Node Depth:	2.10	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	23.3	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
23.30m	SA	Survey abandoned			



Total Defects for section

0 0 0 0 0

DRB Grade for Section

A

Descriptive Report with Remarks and Observation Images

Section 12

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH04	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
23.30m		SA	Survey abandoned SA	

Site: Gawber Road , Barnsley

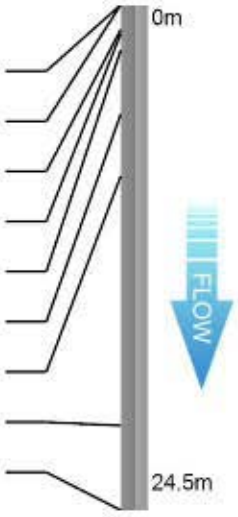
Section 13

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH04	Finish Node Ref:	SA	Direction:	D	Height/Dia:	300
Start Node Depth:	2.12	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	24.5	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
01.20m	JDM	Joint displaced medium		12_2	0:00:14
01.40m	CC	Crack, circumferential 06-12		12_3	0:00:15
02.20m	CC	Crack, circumferential 03-09		12_4	0:00:20
05.30m	JDM	Joint displaced medium		12_5	0:00:29
08.30m	JDM	Joint displaced medium		12_6	0:00:36
20.40m	JDM	Joint displaced medium		12_7	0:00:53
24.50m	SA	Survey abandoned			



Total Defects for section

2	0	4	0	0

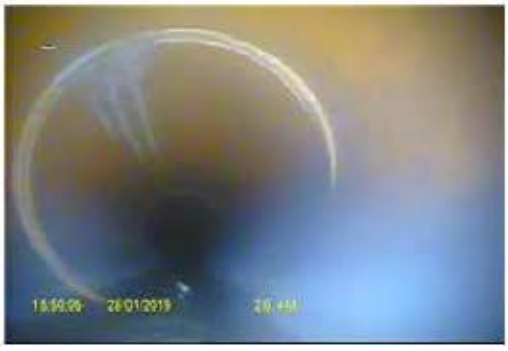
DRB Grade for Section

B

Descriptive Report with Remarks and Observation Images

Section 13

Pos	Video Ref	Code	Description	Image
00.00m		MH	Start node type, manhole MH04	
00.00m	0:00:00	WL	Water level: 0% Height/Diameter	
01.20m	0:00:14	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 12_2 
01.40m	0:00:15	CC	Crack, circumferential from 06 o'clock to 12 o'clock - Severity 1	Image Provided - Ref: 12_3 
02.20m	0:00:20	CC	Crack, circumferential from 03 o'clock to 09 o'clock - Severity 1	Image Provided - Ref: 12_4 

Pos	Video Ref	Code	Description	Image
05.30m	0:00:29	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 12_5 
08.30m	0:00:36	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 12_6 
20.40m	0:00:53	JDM	Joint displaced medium - Severity 3	Image Provided - Ref: 12_7 
24.50m		SA	Survey abandoned SA	

Site: Gawber Road , Barnsley

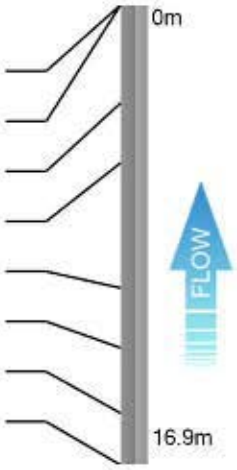
Section 14

Client:	Location (Street Name):	City/Town/Village	Cust Job Ref.	Surveyors Name:	Date:
Mott Macdonald	Gawber Road	Barnsley		Jordan Beckett	28/01/2019

Start Node Ref:	MH04	Finish Node Ref:	LATA	Direction:	U	Height/Dia:	225
Start Node Depth:	1.94	Finish Node Depth:	0.00	Use:	S	Shape:	C
Start Node Coordinate:		Finish Node Coordinate:		Material:	VC	Cleaned	N

Drain Type	Lining Type	Lining Mat.	Year Const.	Weather	Flow Cont.	Length	Remarks
A				D	N	16.9	

Position	Code	Description	CD	Pic	Video Ref
00.00m	MH	Start node type, manhole			
00.00m	WL	Water level 0%			0:00:00
03.60m	LRQ	Line of drain/sewer deviates right [quarter]		13_2	0:00:17
05.80m	JDM	Joint displaced medium		13_3	0:00:23
10.40m	JDM	Joint displaced medium		13_4	0:00:31
12.60m	JDM	Joint displaced medium		13_5	0:02:45
15.00m	LLQ	Line of drain/sewer deviates left [quarter]		13_6	0:03:04
16.90m	SA	Survey abandoned			



Total Defects for section

0 0 3 0 0

DRB Grade for Section

B