



environmental
drainage solutions ltd

DRAINAGE INVESTIGATION REPORT

CLIENT BGP CONSULTING LLP

SITE SAUNDERSON ROAD -
PENISTONE

DATE 12/10/2012 JOB No. 4771

- **Comprehensive Site Surveys**
- **Drainage Rehabilitation**
- **Pipeline and Ancillary Installation**
- **Maintenance Programme
Appraisal & implementation**

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CCTV REPORT HEADER CODE EXPLANATION



Detailed below are explanations for the standard Water Research Council (WRC) CCTV report header codes. Whilst WRC defect codes are also included within the body of the report, they are accompanied by an explanation in the "Observation" column. Please contact Environmental Drainage Solutions on the number below if you wish to discuss any aspect of this report.

CODE	LOCATION DESCRIPTION
A	Main road - urban (town or city centre with heavy goods vehicles)
B	Main road - suburban/rural (all other roads with heavy goods vehicles)
C	Light road (rural roads with light traffic, town and city back streets, estate roads and parking areas)
D	Footpath or verge (within the highway boundary)
E	Fields (farmland and public open space)
F	Gardens (within private property)
G	Woodland
X	Difficult access (Motorway, railway, watercourse, inside building).

CODE	PIPE MATERIAL DESCRIPTION
AC	Asbestos cement
AK	Alkathene
BR	Brick
CC	Concrete box culvert
CI	Cast Iron
CO	Concrete
CSB	Concrete segments (bolted)
CSU	Concrete segments (unbolted)
DI	Ductile iron
GRC	Glass reinforced cement
GRP	Glass reinforced plastic
MAC	Masonry - in regular courses
MAR	Masonry - randomly coursed
PE	Polyethylene
PF	Pitch fibre
PP	Polypropylene
PSC	Plastic/steel composite
PVC	Polyvinyl chloride
RPM	Reinforced plastic matrix
SI	Spun (grey) iron
ST	Steel
VC	Vitrified clay (ie all clayware)
XXX	Other (state in comments)
ZZZ	Not known

CODE	PIPE SHAPE DESCRIPTION
A	Arched (with flat bottom)
B	Barrel (e.g. beer barrel shape)
C	Circular
E	Egg shaped
H	Horshoe (i.e. inverted U)
O	Oval
R	Rectangular
S	Square
T	Trapezoidal
U	U-shaped with flat top
X	Other (state in comments)

CODE	WEATHER DESCRIPTION
1	Dry
2	Heavy rain
3	Light rain
4	Showers
5	Snow

CODE	PIPE LINING DESCRIPTION
BL	Bitumen
CL	Cement
IS	Soft inversion type liner
PL	Plastic
RL	Resin
XXX	Other (state in comments)
ZZZ	Not known

CODE	PIPE USE DESCRIPTION
C	Combined
F	Foul
S	Surface Water
T	Trade Effluent
W	Watercourse
X	Other
Z	Not known

CODE	SURVEY DIRECTION DESCRIPTION
D	Downstream
U	Upstream

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STRUCTURAL PERFORMANCE ASSESSMENT CRITERIA CLAYWARE AND CONCRETE DRAINAGE

Detailed below are the criteria used for the assessment of severity of defects in accordance with the Water Research Council (WRC). Proposed remedial works are based upon these assessments in conjunction with many other issues such as nature of original problem (if any), implications of collapse (depth, location etc), frequency of surcharging, and many more. Most drainage systems exhibit structural defects of some sort and the WRC assessments can only be a guideline. In the right ground conditions, quite serious defects can be stable for many years. We aim to provide a reasonable, balanced recommendation for remedial works, based upon our experience and following consultation with the client. Please contact Environmental Drainage Solutions if you wish to discuss any aspect of this report.

DEFECT	STRUCTURAL IMPLICATION
CIRCUMFERENTIAL CRACK MEDIUM JOINT DISPLACEMENT MEDIUM OPEN JOINT SLIGHT SPALLING OR WEAR	MINIMAL COLLAPSE RISK IN SHORT TERM, BUT POTENTIAL FOR FURTHER DETERIORATION MINIMAL COLLAPSE RISK IN SHORT TERM, BUT POTENTIAL FOR FURTHER DETERIORATION MINIMAL COLLAPSE RISK IN SHORT TERM, BUT POTENTIAL FOR FURTHER DETERIORATION MINIMAL COLLAPSE RISK IN SHORT TERM, BUT POTENTIAL FOR FURTHER DETERIORATION
FRACTURE WITH DEFORMATION <5% LONGITUDINAL OR MULTIPLE CRACKING MINOR LOSS OF LEVEL (i.e. DIP IN PIPE) LARGE DISPLACED JOINT LARGE OPEN JOINT SLIGHT SPALLING OR WEAR	COLLAPSE UNLIKELY IN NEAR FUTURE BUT FURTHER DETERIORATION LIKELY COLLAPSE UNLIKELY IN NEAR FUTURE BUT FURTHER DETERIORATION LIKELY COLLAPSE UNLIKELY IN NEAR FUTURE BUT FURTHER DETERIORATION LIKELY COLLAPSE UNLIKELY IN NEAR FUTURE BUT FURTHER DETERIORATION LIKELY COLLAPSE UNLIKELY IN NEAR FUTURE BUT FURTHER DETERIORATION LIKELY COLLAPSE UNLIKELY IN NEAR FUTURE BUT FURTHER DETERIORATION LIKELY
BROKEN PIPEWORK BROKEN PIPEWORK WITH DEFORMATION <10% FRACTURE WITH DEFORMATION <10% MULTIPLE FRACTURE SERIOUS LOSS OF LEVEL LARGE SPALLING OR WEAR	COLLAPSE LIKELY IN FORESEEABLE FUTURE COLLAPSE LIKELY IN FORESEEABLE FUTURE COLLAPSE LIKELY IN FORESEEABLE FUTURE COLLAPSE LIKELY IN FORESEEABLE FUTURE COLLAPSE LIKELY IN FORESEEABLE FUTURE COLLAPSE LIKELY IN FORESEEABLE FUTURE
ALREADY COLLAPSED BROKEN PIPEWORK WITH DEFORMATION >10% EXTENSIVE AREAS OF FABRIC MISSING FRACTURE WITH DEFORMATION >10%	COLLAPSED OR COLLAPSE IMMINENT COLLAPSED OR COLLAPSE IMMINENT COLLAPSED OR COLLAPSE IMMINENT COLLAPSED OR COLLAPSE IMMINENT

CCTV REPORT SUMMARY



SITE ADDRESS: SAUNDERSON ROAD - PENISTONE

DATE: 12/10/2012

No.	FROM	TO	DIR	DIA(MM)	JET	COMMENTS
1	EDS1	BRANCH A	U	225		
2	EDS1	BRANCH X	D	225		
3	EDS1	BRANCH A	U	225		SURVEY ALSO CARRIED OUT IN REVERSE - CHAINAGE ON REVERSE SURVEY INCORRECT

CCTV REPORT SHEET



Client:	BGP CONSULTING LLP	Sheet No:	1
Site:	SAUNDERSON ROAD - PENISTONE	Date:	12/10/2012

Job No.	Operator	Location code	Weather	Pre clean	Shape	Lining	Tape No.
4771	IW	F	1		C		1

Start MH	Depth(m)	Finish MH	Depth(m)	Direction	Dia(mm)	Dim(mm)	Material	Use	Length(M)
EDS1	2.1	BRANCH A		U	225	0	VC	C	

General comments	
	BRANCH A = NO DEPTH (UNKNOWN)

Count	Code	Observation	Remarks
0.9	ST	Start of survey	
0.9	MH	Manhole or node	EDS1
0.9	WL	Water Level	10%
0.9	CM	Multiple cracks	10 o'clock to 2 o'clock
1.9	CM	Multiple cracks	9 o'clock to 12 o'clock
2.7	FC	Circumferential fracture	6 o'clock to 9 o'clock
3.0	DE	Debris	SEWAGE LITTER
4.0	FC	Circumferential fracture	3 o'clock to 5 o'clock
5.5	WL	Water Level	5%
10.0	MH	Manhole or node	UNKNOWN
10.3	JN	Junction	100MM @ 3 o'clock - IN BENCHING OF MANHOLE
18.9	MH	Manhole or node	UNKNOWN
19.1	JN	Junction	150MM @ 5 o'clock - IN BENCHING OF MANHOLE
19.9	DC	Dimension of pipe changes	TO 150MM
20.6	OB	Obstruction	20% - STONE CAUGHT IN JOINT
20.6	SA	Survey abandoned	DUE TO OBSTRUCTION

CCTV REPORT SHEET



Client:	BGP CONSULTING LLP	Sheet No:	2
Site:	SAUNDERSON ROAD - PENISTONE	Date:	12/10/2012

Job No.	Operator	Location code	Weather	Pre clean	Shape	Lining	Tape No.
4771	IW	F	1		C		1

Start MH	Depth(m)	Finish MH	Depth(m)	Direction	Dia(mm)	Dim(mm)	Material	Use	Length(M)
EDS1	2.1	BRANCH X		D	225	0	VC	C	75.70

General comments	
	BRANCH X = NO DEPTH (NOT RAISED)

Count	Code	Observation	Remarks
0.9	ST	Start of survey	
0.9	MH	Manhole or node	EDS1
0.9	WL	Water Level	10%
6.1	WL	Water Level	5%
75.7	MH	Manhole or node	UNKNOWN - NOT RAISED IN HIGHWAY (A628)
75.7	FH	Finish survey	

CCTV REPORT SHEET

Client:	BGP CONSULTING LLP	Sheet No:	3
Site:	SAUNDERSON ROAD - PENISTONE	Date:	12/10/2012

Job No.	Operator	Location code	Weather	Pre clean	Shape	Lining	Tape No.
4771	IW	F	1		C		2

Start MH	Depth(m)	Finish MH	Depth(m)	Direction	Dia(mm)	Dim(mm)	Material	Use	Length(M)
EDS1	2.1	BRANCH A		U	225	0	VC	C	

General comments	SURVEY ALSO CARRIED OUT IN REVERSE - CHAINAGE ON REVERSE SURVEY INCORRECT
	BRANCH A = NO DEPTH (UNKNOWN)

Count	Code	Observation	Remarks
0.2	ST	Start of survey	
0.2	MH	Manhole or node	EDS1
0.2	WL	Water Level	10%
0.2	CM	Multiple cracks	10 o'clock to 2 o'clock
1.3	CU	Camera underwater	
11.6	WL	Water Level	10%
18.3	MH	Manhole or node	UNKNOWN
18.3	JN	Junction	150MM @ 5 o'clock - IN MANHOLE
18.6	DC	Dimension of pipe changes	TO 150MM
19.4	OB	Obstruction	30% @ 3 o'clock
24.0	MH	Manhole or node	UNKNOWN
24.0	JN	Junction	150MM @ 5 o'clock - IN MANHOLE
36.8	JDL	Large joint displacement	
41.1	MH	Manhole or node	UNKNOWN
41.1	JN	Junction	100MM @ 5 o'clock
43.5	SA	Survey abandoned	UNABLE TO PROCEED.
	GO	General observation	REVERSE SURVEY CARRIED OUT

MANHOLE RECORD CARD



JOB No. **4771** SHEET **1** OF **2**

CLIENT:- **Billingham George & Ptns** SITE:- **Saunderson Road**

NODE REF	EDS1	
SURVEY DATE	12/10/12	
NODE TYPE	MH	
STATUS	PU	
FUNCTION	C	
INVERT DEPTH(M)	2.10M	
CONSTRUCTION	BR	
REMARKS (Photos etc)		

NODE REF	EDS2	
SURVEY DATE	12/10/12	
NODE TYPE	IC	
STATUS	PR	
FUNCTION	F	
INVERT DEPTH(M)	1.07M	
CONSTRUCTION	BR	
REMARKS (Photos etc)		

NODE REF	EDS3	
SURVEY DATE	12/10/12	
NODE TYPE	IC	
STATUS	PR	
FUNCTION	SW	
INVERT DEPTH(M)	1.49M	
CONSTRUCTION	BR	
REMARKS (Photos etc)	FULL OF DEBRIS - NOT OUTLET VISIBLE	

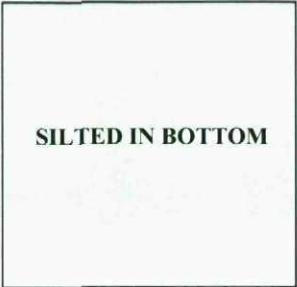
MH - MANHOLE, IC - INSPECTION CHAMBER, PU - PUBLIC, PR - PRIVATE
F - FOUL, SW - SURFACE WATER, C - COMBINED, BR - BRICK, PCC - PRE-CAST CONCRETE

MANHOLE RECORD CARD



JOB No. **4771** SHEET **2** OF **2**

CLIENT:- **Billinghurst George & Ptns** SITE:- **Saunderson Road**

NODE REF	EDS4	
SURVEY DATE	12/10/12	
NODE TYPE	IC	
STATUS	PR	
FUNCTION	SW	
INVERT DEPTH(M)	0.70M	
CONSTRUCTION	BR	
REMARKS (Photos etc)	FULL OF WATER - NO PIPEWORK VISIBLE	

NODE REF	EDS5	
SURVEY DATE	12/10/12	
NODE TYPE	IC	
STATUS	PR	
FUNCTION	SW	
INVERT DEPTH(M)	1.00M	
CONSTRUCTION	BR	
REMARKS (Photos etc)	FULL OF WATER - NO PIPEWORK VISIBLE	

NODE REF	EDS6	
SURVEY DATE	12/10/12	
NODE TYPE	IC	
STATUS	PR	
FUNCTION	SW	
INVERT DEPTH(M)	1.20M	
CONSTRUCTION	BR	
REMARKS (Photos etc)	FULL OF WATER - NO PIPEWORK VISIBLE	

MH - MANHOLE, IC - INSPECTION CHAMBER, PU - PUBLIC, PR - PRIVATE
F - FOUL, SW - SURFACE WATER, C - COMBINED, BR - BRICK, PCC - PRE-CAST CONCRETE

SAUNDERSON ROAD



Title: GP1

Date: 12/10/12

Description: EDS1



Title: GP2

Date: 12/10/12

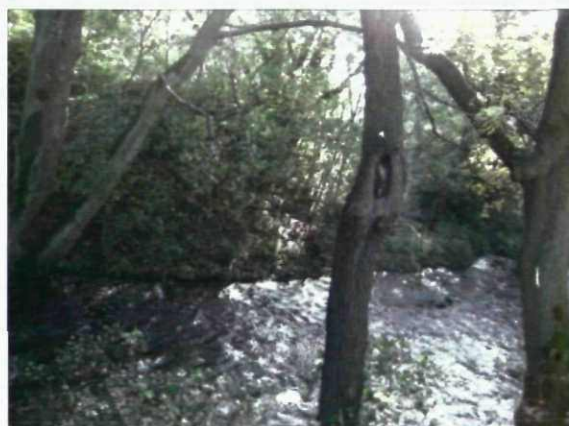
Description: EDS1 - LOCATION



Title: GP3

Date: 12/10/12

Description: RIVER DON



Title: GP4

Date: 12/10/12

Description: RIVER DON

GENERAL PHOTOS

SAUNDERSON ROAD



Title: GP5

Date: 12/10/12

Description: RIVER DON



Title: GP6

Date: 12/10/12

Description: RIVER DON - OUTFALL FROM
HIGHWAY GULLY ON SAUNDERSON RD.



Title: GP7

Date: 12/10/12

Description: RIVER DON - OUTFALL FROM
HIGHWAY GULLY ON SAUNDERSON RD.



Title: GP8

Date: 12/10/12

Description: RIVER DON - OUTFALL FROM
HIGHWAY GULLY ON SAUNDERSON RD.

GENERAL PHOTOS

SAUNDERSON ROAD



Title: GP9

Date: 12/10/12

Description: RIVER DON - OUTFALL FROM
HIGHWAY GULLY ON SAUNDERSON RD.



Title: GP10

Date: 12/10/12

Description: SERVICE INSPECTION CHAMBER



Title: GP11

Date: 12/10/12

Description: SERVICE INSPECTION CHAMBER -
LOCATION



Title: GP12

Date: 12/10/12

Description: MANHOLE NOT RAISED - RAISING
TARMAC

GENERAL PHOTOS

SAUNDERSON ROAD



Title: GP13

Date: 12/10/12

Description: EDS2



Title: GP14

Date: 12/10/12

Description: EDS2 - LOCATION



Title: GP15

Date: 12/10/12

Description: EDS3



Title: GP16

Date: 12/10/12

Description: EDS3 - LOCATION

GENERAL PHOTOS

SAUNDERSON ROAD



Title: GP17

Date: 12/10/12

Description: EDS3 - LOCATION



Title: GP18

Date: 12/10/12

Description: EDS4



Title: GP19

Date: 12/10/12

Description: EDS4 - LOCATION



Title: GP20

Date: 12/10/12

Description: EDS4 - LOCATION

GENERAL PHOTOS

SAUNDERSON ROAD



Title: GP21
Date: 12/10/12
Description: EDS5



Title: GP22
Date: 12/10/12
Description: EDS5 - LOCATION



Title: GP23
Date: 12/10/12
Description: EDS6



Title: GP24
Date: 12/10/12
Description: EDS6 - LOCATION

GENERAL PHOTOS

SAUNDERSON ROAD



Title: GP25

Date: 12/10/12

Description: EDS7 - UNABLE TO RAISE

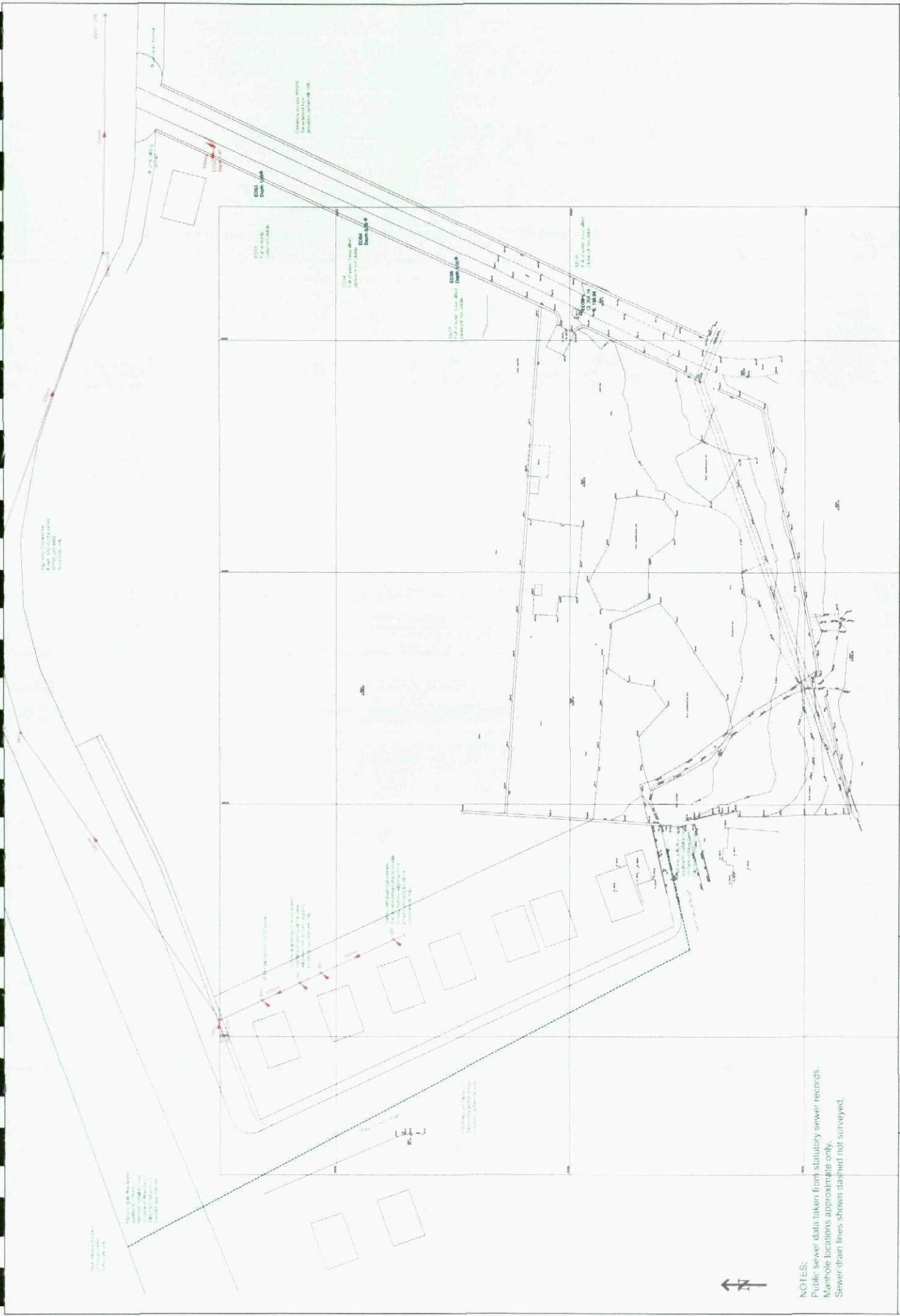


Title: GP26

Date: 12/10/12

Description: EDS8 - UNABLE TO RAISE

GENERAL PHOTOS



NOTES:
 Public sewer data taken from statutory sewer records.
 Manhole locations approximate only.
 Sewer drain lines shown dashed not surveyed.

 Corus Mills Sheffield Rd Rotherham S60 1BN Tel 0845 2300 939 Fax 0845 2300 949 email ops@eds.uk.net Web www.eds.uk.net	Client BGP CONSULTING LLP	Title SAUNDERSON ROAD PENISTONE	Drawn IW	Checked GEC	LEGEND Foul Drain/Sewer Surface Water Drain/Sewer Watercourse / culvert Combined Drain/Sewer		Manhole (Colour denotes use) Gully (Colour denotes use) Rainwater Pipe / Gully Soil Vent Pipe	☐ EDS1 ☐ G ☐ RWP RWG ☐ SVP
			Date 12/10/12	Scale NTS				
			Drawing No. EDS/EAC/4771/01					