

APPENDICES >

- 1.0 TRANSPORT ASSESSMENT
- 2.0 DRAFT TRAVEL PLAN
- 3.0 DESK STUDY
- 4.0 NOISE IMPACT ASSESSMENT
- 5.0 FLOOD RISK ASSESSMENT
- 6.0 DRAINAGE STRATEGY**



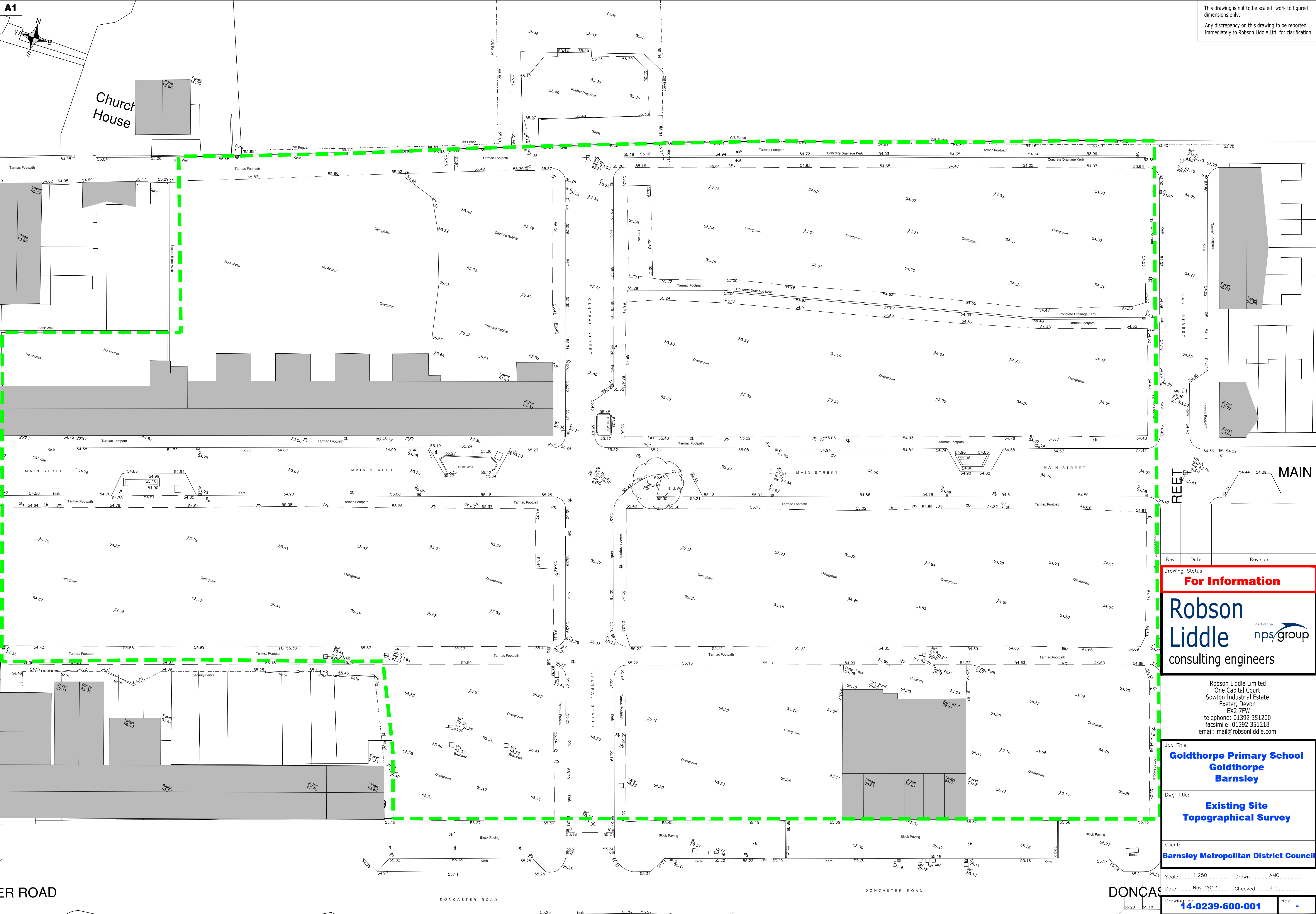
BARNSLEY
Metropolitan Borough Council



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Rev	Date	Revision

For Information

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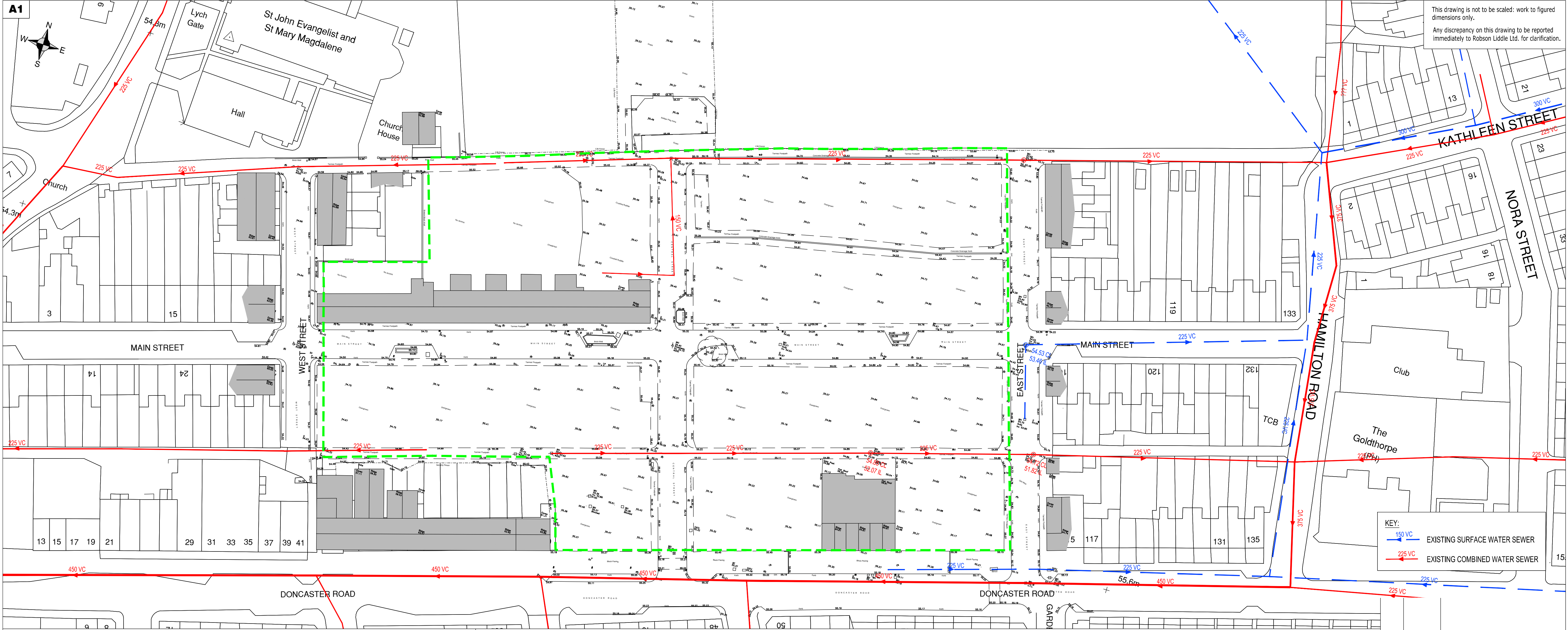
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Job Title:
**Goldthorpe Primary School
Goldthorpe
Barnsley**

Dwg Title:
**Existing Site
Topographical Survey**

Client:
Barnsley Metropolitan District Council

Scale 1:250..... Drawn AMC.....
Date Nov..2013..... Checked JD.....
Drawing no: **14-0239-600-001** Rev -



KEY:
150 VC EXISTING SURFACE WATER SEWER
225 VC EXISTING COMBINED WATER SEWER

Rev	Date	Revision
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Drawing Status
For Information

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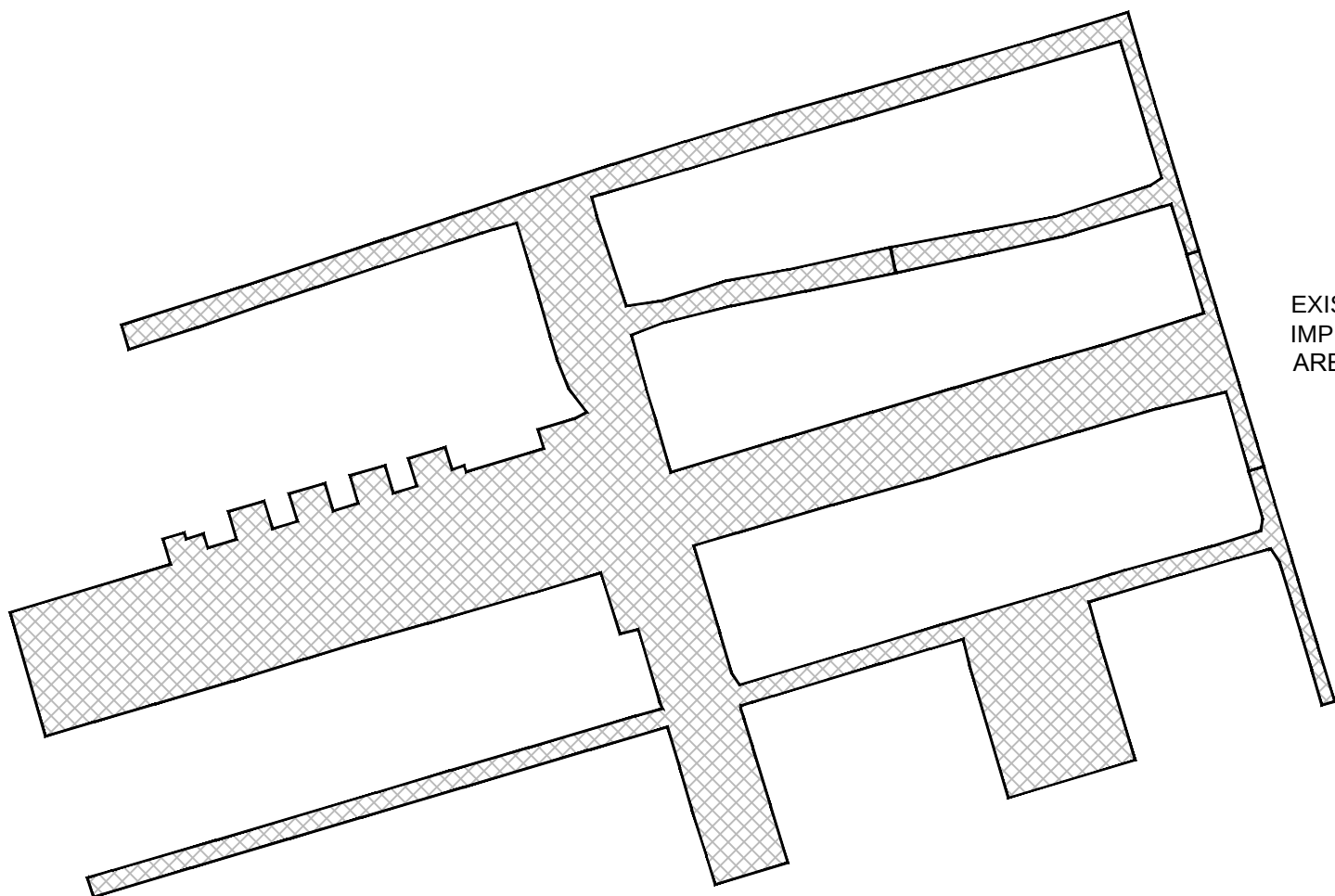
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Job Title:
**Goldthorpe Primary School
Goldthorpe
Barnsley**

Dwg Title:
**Existing Site Drainage
From Yorkshire Water Plans
& Impermeable Areas**

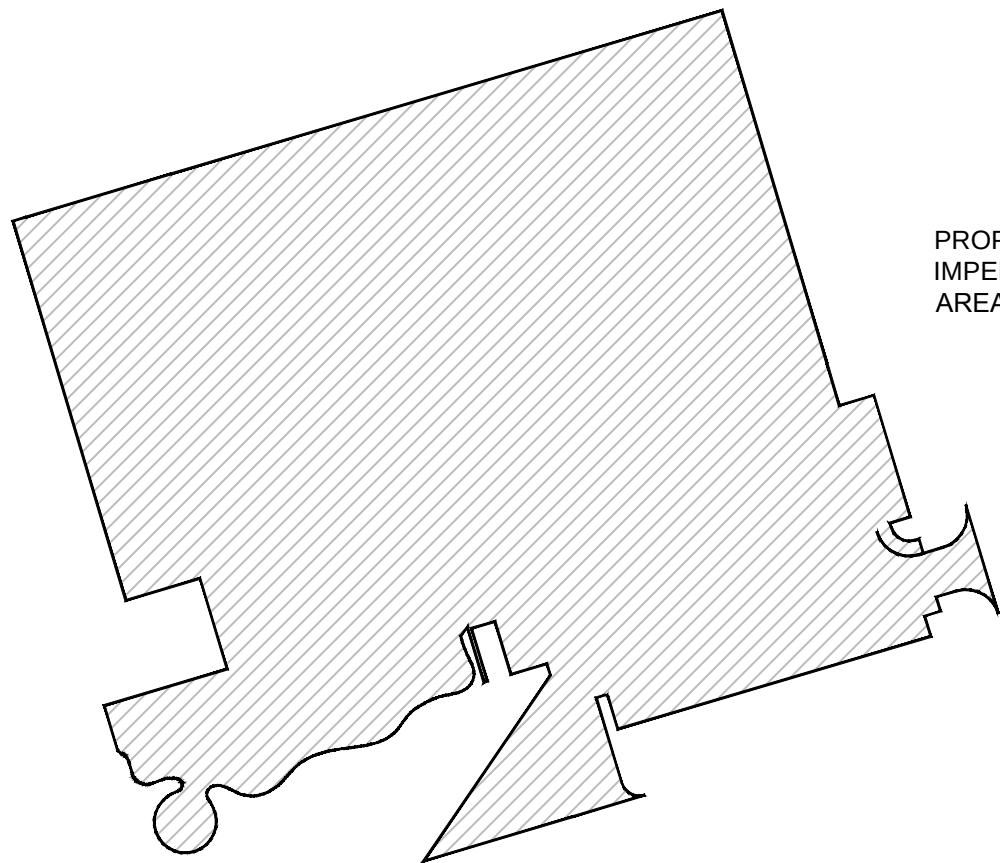
Client:
Barnsley Metropolitan District Council

Scale	1:500	Drawn	AMC
Date	Nov. 2013	Checked	JD
Drawing no:	14-0239-600-002	Rev	-



EXISTING SITE
IMPERMEABLE AREAS
1:1000

EXISTING
IMPERMEABLE
AREA = 5648m²



PROPOSED SITE
IMPERMEABLE AREAS
1:1000

PROPOSED
IMPERMEABLE
AREA = 8511m²

EXISTING SITE DISCHARGE = 61.8l/s IN 1 YEAR PEAK STORM

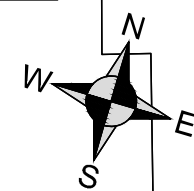
YORKSHIRE WATER REQUIREMENTS ARE FOR A 30% REDUCTION ON THE EXISTING PEAK 1 YEAR DISCHARGE RATE

30% REDUCTION = 18.6l/s

PROPOSED SITE DISCHARGE = **43.2l/s** IN ALL STORMS UP TO AND INCLUDING THE 100 YEAR + 20% CLIMATE CHANGE EVENT

THESE FLOWS WILL NEED TO BE CONFIRMED AND APPROVED BY YORKSHIRE WATERS LAND AND PLANNING TEAM BEFORE FURTHER DESIGN WORK IS UNDERTAKEN.

A1



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- KEY:
- SITE BOUNDARY
 - EXISTING YORKSHIRE WATER COMBINED SEWER
 - PROPOSED FOUL WATER SYSTEM
 - EXISTING YORKSHIRE WATER SURFACE WATER SEWER
 - PROPOSED SURFACE WATER SYSTEM
 - PROPOSED ATTENUATION (System to be confirmed)

105

119

MAIN STREET

108

120

115

117

57 59 61 63 65 67 69

30 30a 30b 32a 30c

32 40 48

50

- Note:
- All RWP positions are indicative. Architect to provide final RWP and SVP positions.
- All manholes in trafficked areas to have Grade D400 covers, manholes in all other areas to be Grade B125.
- 1200Ø Manholes to be Type B in accordance with SFA 6th Edition and Yorkshire Water requirements
- 450Ø Inspection Chambers to be PPIC (Where deeper than 1.2m to IL access to be restricted to 300mm)
- 600Ø Inspection Chambers to be Wavin IC600 Range Product
- Yorkshire Water Sewers are shown from Yorkshire Water Records, levels are from Topographical Survey Information and need to be confirmed on site.
1. The minimum depth of cover to the crown of gravity pipes without protection should be as follows:
- domestic gardens and pathways without any possibility of vehicular access, 0.35m;
 - domestic driveways, parking areas and yards with height restrictions to prevent entry by vehicles with a gross vehicle weight in excess of 7.5 tonnes, 0.5m;
 - domestic driveways, parking areas and narrow streets without footways (e.g. mews developments) with limited access for vehicles with a gross vehicle weight in excess of 7.5 tonnes, 0.9m;
 - agricultural land and public open space, 0.9m; or
 - other highways and parking areas with unrestricted access to vehicles with a gross weight in excess of 7.5 tonnes, 1.2m.

For Information

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Job Title:
**Goldthorpe Primary School
Goldthorpe
Barnsley**

Dwg Title:
**Proposed Layout
and Indicative
Drainge Strategy**

Client:
Barnsley Metropolitan District Council

Scale: 1:250 Drawn: AMC
Date: Nov. 2013 Checked: J.D.

Drawing no: **14-0239-600-003** Rev: -

Robson Liddle Limited		Page 1
Three Capital Court Sowton Industrial Estate Exeter EX2 7FW	Goldthorpe School Existing 225 dia 1yr Site Run-Off	
Date Nov 2013 File Existing Run-Off.mdx	Designed by AMC Checked by	
Micro Drainage	Network 2013.1.1	

Existing Network Details for Storm

* - Indicates pipe has been modified outside of System 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	
* 1.000	31.200	0.135	231.1	0.565	4.00	0.600	o	225	
* 1.001	27.200	0.190	143.2	0.000	0.00	0.600	o	300	
PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
* 1.000	1	38.700	37.110	1.365	38.580	36.975	1.380		1200
* 1.001	2	38.580	36.900	1.380	38.333	36.710	1.323		1200

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.001	Outfall	38.333	36.710	36.710	1200	0

Robson Liddle Limited		Page 1
Three Capital Court Sowton Industrial Estate Exeter EX2 7FW	Goldthorpe Primary School Foul Drainage Network System 1 File	
Date Nov 2013	Designed by AMC	
File Proposed Foul Sewer.mdx	Checked by	
Micro Drainage	Network 2013.1.1	

FOUL SEWERAGE DESIGN

Design Criteria for FOUL RUN.FWS

Pipe Sizes STANDARD Manhole Sizes STANDARD

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	0.00	Minimum Backdrop Height (m)	0.000
Calculation Method	EN 752	Maximum Backdrop Height (m)	0.000
Frequency Factor	0.70	Min Design Depth for Optimisation (m)	1.200
Domestic (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	0.75
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for FOUL RUN.FWS

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Units	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	36.680	0.920	39.9	0.000	0.0	1.0	1.500	o	150
1.001	3.439	0.040	86.0	0.000	0.0	0.0	1.500	o	150
1.002	25.941	0.450	57.6	0.000	0.0	0.0	1.500	o	150
2.000	23.767	0.600	39.6	0.000	0.0	1.0	1.500	o	150
2.001	6.081	0.080	76.0	0.000	0.0	0.0	1.500	o	150
2.002	23.480	0.730	32.2	0.000	0.0	0.0	1.500	o	150
1.003	11.681	0.290	40.3	0.000	0.0	0.0	1.500	o	150
1.004	14.925	0.370	40.3	0.000	0.0	0.0	1.500	o	150
1.005	10.833	0.585	18.5	0.000	0.0	0.0	1.500	o	150

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ Base Flow (l/s)	Σ Units	Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	54.550	0.000	1.0	0.0	0.0	21	0.67	1.39	24.6	1.0
1.001	53.630	0.000	1.0	0.0	0.0	25	0.51	0.95	16.7	1.0
1.002	53.590	0.000	1.0	0.0	0.0	23	0.59	1.16	20.4	1.0
2.000	54.550	0.000	1.0	0.0	0.0	21	0.67	1.39	24.6	1.0
2.001	53.950	0.000	1.0	0.0	0.0	24	0.53	1.01	17.8	1.0
2.002	53.870	0.000	1.0	0.0	0.0	20	0.72	1.55	27.4	1.0
1.003	53.140	0.000	2.0	0.0	0.0	29	0.83	1.38	24.4	2.0
1.004	52.850	0.000	2.0	0.0	0.0	29	0.83	1.38	24.4	2.0
1.005	52.480	0.000	2.0	0.0	0.0	24	1.08	2.04	36.1	2.0

Robson Liddle Limited		Page 2
Three Capital Court Sowton Industrial Estate Exeter EX2 7FW	Goldthorpe Primary School Foul Drainage Network System 1 File	
Date Nov 2013	Designed by AMC	
File Proposed Foul Sewer.mdx	Checked by	
Micro Drainage	Network 2013.1.1	

Manhole Schedules for FOUL RUN.FWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
1	55.300	0.750	Open Manhole	450	1.000	54.550	150				
2	55.300	1.670	Open Manhole	450	1.001	53.630	150	1.000	53.630	150	
3	55.300	1.710	Open Manhole	450	1.002	53.590	150	1.001	53.590	150	
4	55.300	0.750	Open Manhole	450	2.000	54.550	150				
5	55.300	1.350	Open Manhole	450	2.001	53.950	150	2.000	53.950	150	
6	55.300	1.430	Open Manhole	450	2.002	53.870	150	2.001	53.870	150	
7	55.300	2.160	Open Manhole	450	1.003	53.140	150	1.002	53.140	150	
								2.002	53.140	150	
8	55.100	2.250	Open Manhole	1200	1.004	52.850	150	1.003	52.850	150	
9	55.000	2.520	Open Manhole	1200	1.005	52.480	150	1.004	52.480	150	
C O/Fall	54.720	2.825	Open Manhole	1200		OUTFALL		1.005	51.895	150	

Setting Out Information - True Coordinates (FOUL RUN.FWS)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
1.000	1	450		446460.380	404484.998	
1.001	2	450		446495.538	404495.452	
1.002	3	450		446498.744	404494.207	
2.000	4	450		446504.975	404550.736	
2.001	5	450		446511.735	404527.950	
2.002	6	450		446516.456	404524.118	
1.003	7	450		446523.567	404501.741	
1.004	8	1200		446534.802	404498.544	
1.005	9	1200		446549.378	404501.754	
PN	DSMH Name	Dia/Len (mm)	Width (mm)	DS Easting (m)	DS Northing (m)	Layout (North)
1.005	C O/Fall	1200		446556.262	404510.118	

Surcharged Outfall Details for FOUL RUN.FWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.005	C O/Fall	54.720	51.895	51.895	1200	0

Robson Liddle Limited		Page 2
Three Capital Court	Goldthorpe School	
Sowton Industrial Estate	Existing 225 dia	
Exeter EX2 7FW	1yr Site Run-Off	
Date Nov 2013	Designed by AMC	
File Existing Run-Off.mdx	Checked by	
Micro Drainage	Network 2013.1.1	

1 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

 Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.330 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
 Analysis Timestep Fine Inertia Status OFF
 DTS Status ON

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 1
 Climate Change (%) 0

PN	Storm	Return Climate Period Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	1	0%	1/15 Summer			
1.001	15 Winter	1	0%				

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'ed Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	37.718	0.383	0.000	1.94	0.0	61.8	SURCHARGED
1.001	2	37.093	-0.107	0.000	0.74	0.0	61.7	OK

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Three Capital Court Sowton Industrial Estate Exeter EX2 7FW	Goldthorpe Primary School Surface Water System Simulation File	
Date Nov 2013 File Proposed Surface Sewer...	Designed by AMC Checked by	
Micro Drainage	Network 2013.1.1	

Existing Network Details for STORM.SWS

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	
	* 1.000	32.121	0.210	153.0	0.051	4.00	0.600	o	225	
	* 1.001	40.077	0.270	148.4	0.060	0.00	0.600	o	225	
	* 2.000	12.218	0.080	152.7	0.040	4.00	0.600	o	225	
	* 2.001	27.631	0.190	145.4	0.000	0.00	0.600	o	225	
	* 3.000	12.501	0.100	125.0	0.035	4.00	0.600	o	225	
	* 3.001	7.119	0.070	101.7	0.000	0.00	0.600	o	225	
	* 2.002	23.900	0.160	149.4	0.000	0.00	0.600	o	225	
	* 1.002	47.307	0.235	201.3	0.050	0.00	0.600	o	225	
	* 1.003	37.796	0.250	151.2	0.100	0.00	0.600	o	300	
	* 4.000	21.212	0.140	151.5	0.050	4.00	0.600	o	225	
	* 4.001	29.819	0.125	238.6	0.060	0.00	0.600	o	225	
	* 5.000	21.851	0.125	174.8	0.085	4.00	0.600	o	225	
	* 4.002	30.783	0.200	153.9	0.060	0.00	0.600	o	300	
	* 4.003	24.272	0.160	151.7	0.060	0.00	0.600	o	300	
	6.000	18.945	0.100	189.5	0.050	4.00	0.600	o	150	
	* 6.001	5.562	0.500	11.1	0.050	0.00	0.600	o	150	
	PN	US/MH	US/CL	US/IL	US	DS/CL	DS/IL	DS	Ctrl	US/MH
		Name	(m)	(m)	C.Depth (m)	(m)	(m)	C.Depth (m)		(mm)
*	1.000	1	55.350	54.600	0.525	55.350	54.390	0.735		600
*	1.001	2	55.350	54.390	0.735	55.300	54.120	0.955		600
*	2.000	3	55.300	54.550	0.525	55.300	54.470	0.605		600
*	2.001	4	55.300	54.470	0.605	55.350	54.280	0.845		600
*	3.000	5	55.350	54.450	0.675	55.300	54.350	0.725		600
*	3.001	6	55.300	54.350	0.725	55.350	54.280	0.845		600
*	2.002	7	55.350	54.280	0.845	55.300	54.120	0.955		600
*	1.002	8	55.300	54.120	0.955	55.100	53.885	0.990		600
*	1.003	9	55.100	53.810	0.990	55.150	53.560	1.290		600
*	4.000	10	55.300	54.360	0.715	55.300	54.220	0.855		600
*	4.001	11	55.300	54.220	0.855	55.300	54.095	0.980		600
*	5.000	12	55.300	54.220	0.855	55.300	54.095	0.980		600
*	4.002	13	55.300	54.020	0.980	55.300	53.820	1.180		600
*	4.003	14	55.300	53.820	1.180	55.350	53.660	1.390		600
	6.000	15	55.400	54.200	1.050	55.300	54.100	1.050		450
*	6.001	16	55.300	54.100	1.050	55.350	53.600	1.600		450

Robson Liddle Limited		Page 2
Three Capital Court Sowton Industrial Estate Exeter EX2 7FW	Goldthorpe Primary School Surface Water System Simulation File	
Date Nov 2013 File Proposed Surface Sewer...	Designed by AMC Checked by	
Micro Drainage	Network 2013.1.1	

Existing Network Details for STORM.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	
* 4.004	15.206	0.100	152.1	0.000	0.00	0.600	o	300	
* 7.000	28.924	0.200	144.6	0.050	4.00	0.600	o	225	
* 7.001	18.016	0.120	150.1	0.050	0.00	0.600	o	225	
* 7.002	4.979	0.100	49.8	0.000	0.00	0.600	o	225	
* 7.003	13.620	0.090	151.3	0.000	0.00	0.600	o	225	
* 8.000	9.300	0.040	232.5	0.000	4.00	0.600	o	450	
* 1.004	14.153	0.100	141.5	0.000	0.00	0.600	o	150	
PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
* 4.004	17	55.350	53.660	1.390	55.150	53.560	1.290		600
* 7.000	18	55.150	54.070	0.855	55.100	53.870	1.005		1200
* 7.001	19	55.100	53.870	1.005	55.150	53.750	1.175		1200
* 7.002	20	55.150	53.750	1.175	55.150	53.650	1.275		1200
* 7.003	21	55.150	53.650	1.275	55.150	53.560	1.365	Non Return Valve	1200
* 8.000	CS	55.450	53.600	1.400	55.150	53.560	1.140		450
* 1.004	22	55.150	53.560	1.440	54.530	53.460	0.920		1200

Robson Liddle Limited		Page 3
Three Capital Court Sowton Industrial Estate Exeter EX2 7FW	Goldthorpe Primary School Surface Water System Simulation File	
Date Nov 2013 File Proposed Surface Sewer...	Designed by AMC Checked by	
Micro Drainage	Network 2013.1.1	

Manhole Schedules for STORM.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1	55.350	0.750	Open Manhole	600	1.000	54.600	225				
2	55.350	0.960	Open Manhole	600	1.001	54.390	225	1.000	54.390	225	
3	55.300	0.750	Open Manhole	600	2.000	54.550	225				
4	55.300	0.830	Open Manhole	600	2.001	54.470	225	2.000	54.470	225	
5	55.350	0.900	Open Manhole	600	3.000	54.450	225				
6	55.300	0.950	Open Manhole	600	3.001	54.350	225	3.000	54.350	225	
7	55.350	1.070	Open Manhole	600	2.002	54.280	225	2.001	54.280	225	
								3.001	54.280	225	
8	55.300	1.180	Open Manhole	600	1.002	54.120	225	1.001	54.120	225	
								2.002	54.120	225	
9	55.100	1.290	Open Manhole	600	1.003	53.810	300	1.002	53.885	225	
10	55.300	0.940	Open Manhole	600	4.000	54.360	225				
11	55.300	1.080	Open Manhole	600	4.001	54.220	225	4.000	54.220	225	
12	55.300	1.080	Open Manhole	600	5.000	54.220	225				
13	55.300	1.280	Open Manhole	600	4.002	54.020	300	4.001	54.095	225	
								5.000	54.095	225	
14	55.300	1.480	Open Manhole	600	4.003	53.820	300	4.002	53.820	300	
15	55.400	1.200	Open Manhole	450	6.000	54.200	150				
16	55.300	1.200	Open Manhole	450	6.001	54.100	150	6.000	54.100	150	
17	55.350	1.750	Open Manhole	600	4.004	53.660	300	4.003	53.660	300	
								6.001	53.600	150	
18	55.150	1.080	Open Manhole	1200	7.000	54.070	225				
19	55.100	1.230	Open Manhole	1200	7.001	53.870	225	7.000	53.870	225	
20	55.150	1.400	Open Manhole	1200	7.002	53.750	225	7.001	53.750	225	
21	55.150	1.500	Open Manhole	1200	7.003	53.650	225	7.002	53.650	225	
CS	55.450	1.850	Open Manhole	450	8.000	53.600	450				
22	55.150	1.590	Open Manhole	1200	1.004	53.560	150	1.003	53.560	300	
								4.004	53.560	300	
								7.003	53.560	225	
								8.000	53.560	450	
SW O/F	54.530	1.070	Open Manhole	1200		OUTFALL		1.004	53.460	150	

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Setting Out Information - True Coordinates (STORM.SWS)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
1.000	1	600		446454.672	404504.485	
1.001	2	600		446484.396	404516.662	
2.000	3	600		446443.774	404517.750	
2.001	4	600		446455.467	404521.289	
3.000	5	600		446434.954	404548.263	
3.001	6	600		446446.950	404551.781	
2.002	7	600		446453.435	404548.845	
1.002	8	600		446476.268	404555.907	
1.003	9	600		446521.673	404569.186	
4.000	10	600		446446.301	404479.215	
4.001	11	600		446466.671	404485.131	
5.000	12	600		446497.261	404472.496	
4.002	13	600		446495.067	404494.236	
4.003	14	600		446524.612	404502.877	
6.000	15	450		446508.194	404543.071	
6.001	16	450		446513.609	404524.916	
4.004	17	600		446518.948	404526.478	

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Setting Out Information - True Coordinates (STORM.SWS)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
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7.000	18	1200		446510.113	404489.203	
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7.001	19	1200		446537.843	404497.429	
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7.002	20	1200		446532.719	404514.701	
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7.003	21	1200		446531.303	404519.475	
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8.000	CS	450		446523.359	404532.726	
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1.004	22	1200		446532.672	404533.026	
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PN	DSMH Name	Dia/Len (mm)	Width (mm)	DS Easting (m)	DS Northing (m)	Layout (North)
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1.004	SW O/F	1200		446546.394	404536.490	
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Free Flowing Outfall Details for STORM.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.004	SW O/F	54.530	53.460	53.460	1200	0
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Online Controls for STORM.SWS

Non Return Valve Manhole: 21, DS/PN: 7.003, Volume (m³): 1.8

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Storage Structures for STORM.SWS

Tank or Pond Manhole: CS, DS/PN: 8.000

Invert Level (m) 53.600

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	220.0	2.400	0.0	4.800	0.0	7.200	0.0	9.600	0.0
0.400	220.0	2.800	0.0	5.200	0.0	7.600	0.0	10.000	0.0
0.800	220.0	3.200	0.0	5.600	0.0	8.000	0.0		
1.200	220.0	3.600	0.0	6.000	0.0	8.400	0.0		
1.600	0.0	4.000	0.0	6.400	0.0	8.800	0.0		
2.000	0.0	4.400	0.0	6.800	0.0	9.200	0.0		

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM.SWS

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
 Hot Start Level (mm) 0 Inlet Coefficient 0.800
 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
 Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
 Number of Online Controls 1 Number of Storage Structures 1 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 19.000 Cv (Summer) 0.750
 Region England and Wales Ratio R 0.252 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status ON
 DVD Status ON
 Inertia Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
 Return Period(s) (years) 2, 30, 100
 Climate Change (%) 0, 10, 20

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	2	0%	30/15 Winter	100/15 Summer			4
1.001	15 Winter	2	0%	30/15 Summer	100/15 Summer			3
2.000	15 Summer	2	0%	30/15 Winter	100/15 Summer			4
2.001	15 Summer	2	0%	30/15 Summer	100/15 Winter			1
3.000	15 Winter	2	0%	30/15 Summer				
3.001	15 Summer	2	0%	30/15 Summer	100/15 Winter			1
2.002	15 Winter	2	0%	30/15 Summer				
1.002	15 Winter	2	0%	30/15 Summer				
1.003	15 Winter	2	0%	2/15 Winter				
4.000	15 Winter	2	0%	30/15 Summer	100/15 Winter			1
4.001	15 Winter	2	0%	30/15 Summer				
5.000	15 Winter	2	0%	30/15 Summer				
4.002	15 Winter	2	0%	30/15 Summer				
4.003	15 Winter	2	0%	2/15 Summer				
6.000	15 Winter	2	0%	30/15 Summer				
6.001	15 Winter	2	0%	30/15 Summer				
4.004	15 Winter	2	0%	2/15 Summer				
7.000	15 Winter	2	0%	30/15 Summer				
7.001	15 Winter	2	0%	30/15 Summer				
7.002	15 Winter	2	0%	2/15 Summer				
7.003	15 Winter	2	0%	2/15 Summer				
8.000	120 Winter	2	0%	30/30 Winter				
1.004	15 Winter	2	0%	2/15 Summer				

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM.SWS

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	54.669	-0.156	0.000	0.20	0.0	7.9	OK
1.001	2	54.486	-0.129	0.000	0.37	0.0	15.1	OK
2.000	3	54.613	-0.162	0.000	0.17	0.0	6.3	OK
2.001	4	54.529	-0.166	0.000	0.16	0.0	6.2	OK
3.000	5	54.505	-0.170	0.000	0.14	0.0	5.5	OK
3.001	6	54.408	-0.167	0.000	0.15	0.0	5.5	OK
2.002	7	54.364	-0.141	0.000	0.30	0.0	11.6	OK
1.002	8	54.290	-0.055	0.000	0.89	0.0	31.1	OK
1.003	9	54.135	0.025	0.000	0.42	0.0	35.3	SURCHARGED
4.000	10	54.429	-0.156	0.000	0.20	0.0	7.8	OK
4.001	11	54.331	-0.114	0.000	0.48	0.0	15.0	OK
5.000	12	54.315	-0.130	0.000	0.37	0.0	13.3	OK
4.002	13	54.268	-0.052	0.000	0.40	0.0	32.8	OK
4.003	14	54.227	0.107	0.000	0.37	0.0	29.5	SURCHARGED
6.000	15	54.288	-0.062	0.000	0.65	0.0	7.8	OK
6.001	16	54.158	-0.092	0.000	0.32	0.0	14.0	OK
4.004	17	54.128	0.168	0.000	0.51	0.0	38.9	SURCHARGED
7.000	18	54.137	-0.158	0.000	0.19	0.0	7.8	OK
7.001	19	54.065	-0.030	0.000	0.34	0.0	12.8	OK
7.002	20	54.048	0.073	0.000	0.20	0.0	8.7	SURCHARGED
7.003	21	54.042	0.167	0.000	0.25	0.0	9.1	SURCHARGED
8.000	CS	53.809	-0.241	0.000	0.09	0.0	12.8	OK
1.004	22	54.027	0.317	0.000	2.06	0.0	28.1	SURCHARGED

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM.SWS

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	54.869	0.044	0.000	0.40	0.0	15.7	SURCHARGED
1.001	2	54.841	0.226	0.000	0.65	0.0	26.3	SURCHARGED
2.000	3	54.802	0.027	0.000	0.35	0.0	12.6	SURCHARGED
2.001	4	54.789	0.094	0.000	0.29	0.0	11.6	SURCHARGED
3.000	5	54.790	0.115	0.000	0.27	0.0	10.9	SURCHARGED
3.001	6	54.777	0.202	0.000	0.23	0.0	8.5	SURCHARGED
2.002	7	54.769	0.264	0.000	0.42	0.0	16.3	SURCHARGED
1.002	8	54.740	0.395	0.000	1.36	0.0	47.5	SURCHARGED
1.003	9	54.296	0.186	0.000	0.82	0.0	68.3	SURCHARGED
4.000	10	54.764	0.179	0.000	0.36	0.0	13.8	SURCHARGED
4.001	11	54.737	0.292	0.000	0.90	0.0	28.2	SURCHARGED
5.000	12	54.697	0.252	0.000	0.63	0.0	22.6	SURCHARGED
4.002	13	54.634	0.314	0.000	0.80	0.0	64.9	SURCHARGED
4.003	14	54.501	0.381	0.000	0.99	0.0	79.6	SURCHARGED
6.000	15	54.672	0.322	0.000	1.18	0.0	14.2	SURCHARGED
6.001	16	54.528	0.278	0.000	0.64	0.0	28.3	SURCHARGED
4.004	17	54.321	0.361	0.000	1.36	0.0	102.8	SURCHARGED
7.000	18	54.396	0.101	0.000	0.33	0.0	13.1	SURCHARGED
7.001	19	54.364	0.269	0.000	0.66	0.0	24.9	SURCHARGED
7.002	20	54.280	0.305	0.000	0.56	0.0	24.8	SURCHARGED
7.003	21	54.201	0.326	0.000	0.68	0.0	25.1	SURCHARGED
8.000	CS	54.200	0.150	0.000	0.17	0.0	24.8	SURCHARGED
1.004	22	54.243	0.533	0.000	2.38	0.0	32.5	SURCHARGED

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for STORM.SWS

PN	US/MH Name	Water		Flooded		Pipe		Status
		Level (m)	Surch'd Depth (m)	Volume (m³)	Flow / Cap.	O'flow (l/s)	Flow (l/s)	
1.000	1	55.351	0.526	1.541	0.58	0.0	23.0	FLOOD
1.001	2	55.350	0.735	0.196	0.76	0.0	30.9	FLOOD
2.000	3	55.301	0.526	0.619	0.43	0.0	15.6	FLOOD
2.001	4	55.300	0.605	0.034	0.38	0.0	15.3	FLOOD
3.000	5	55.322	0.647	0.000	0.32	0.0	12.6	FLOOD RISK
3.001	6	55.300	0.725	0.175	0.38	0.0	14.0	FLOOD
2.002	7	55.286	0.781	0.000	0.60	0.0	23.5	FLOOD RISK
1.002	8	55.258	0.913	0.000	1.76	0.0	61.3	FLOOD RISK
1.003	9	54.684	0.574	0.000	0.88	0.0	73.3	SURCHARGED
4.000	10	55.300	0.715	0.431	0.51	0.0	19.6	FLOOD
4.001	11	55.279	0.834	0.000	1.22	0.0	38.2	FLOOD RISK
5.000	12	55.229	0.784	0.000	0.85	0.0	30.5	FLOOD RISK
4.002	13	55.134	0.814	0.000	1.07	0.0	86.8	FLOOD RISK
4.003	14	54.895	0.775	0.000	1.34	0.0	107.6	SURCHARGED
6.000	15	55.212	0.862	0.000	1.59	0.0	19.1	FLOOD RISK
6.001	16	54.962	0.712	0.000	0.87	0.0	38.3	SURCHARGED
4.004	17	54.719	0.759	0.000	1.37	0.0	103.8	SURCHARGED
7.000	18	54.589	0.294	0.000	0.48	0.0	19.5	SURCHARGED
7.001	19	54.539	0.444	0.000	1.02	0.0	38.7	SURCHARGED
7.002	20	54.512	0.537	0.000	0.36	0.0	15.9	SURCHARGED
7.003	21	54.508	0.633	0.000	0.43	0.0	15.8	SURCHARGED
8.000	CS	54.548	0.498	0.000	0.19	0.0	27.7	SURCHARGED
1.004	22	54.641	0.931	0.000	3.03	0.0	41.4	SURCHARGED