Project: **Hereford North Magazine, N15 Plot**				Status: Final	
Date: 26/07/17 By: AJS Checked:		Job no.: 3512463A-HHC	Section:	Sheet no.:	Rev:
Rev:	Date:	Details: Surface Water Drainage Design		Tel: Fax:	
Part: Trench soakaway					

REF		OUTPUT
	Impermeable area discharging to trench soakaway 2350m^2 plus an additional 1780m^2 for the driver training school to the west; (During construction it was found that this area currently discharged onto the site) The adjacent (southern) building has been excluded.	
	Infiltration rate of 6.73 x 10 $^{-5}$ m/s from previous testing	0.24m/hr
	Soakaway trench in two parts to accommodate additional area from driver training school Main section 40.7m (L) x 4.25m (W) x 1.6m (ED) Additional section approximately 12m (L) x 9.5m (W) x 1.6m (ED) Assuming a void ratio of 0.3 for 40mm clean stone, trench volume	142.5m^3
	The trench works for a 30 year design event, including 30% allowance for climate change. Base infiltration is excluded in the modelling as a worst case.	
	The system floods in the 100 year event but to a maximum volume of 47m^3, this water could be held on the surface of the car park to a depth of 50mm. The development is also situated adjacent to one of the overland flow routes identified in the Rotherwas flood modelling. This ensures that no properties will be flooded during the 100 year event.	
	The proposed site layout by Melcon fits within the parameters of the original design.	
	The soakaway test, trial pit logs, WinDes calculations and indicative layout can be seen in the appendices.	
	Appendix A – Trial Pit Log and Soakaway Test Results	
	Appendix B – Windes 1:30 year results	
	Appendix C – Windes 1:100 year results	
	Appendix D – Original Proposal and Melcon Layout	
	Appendix E – Constructed Design	

Project: **Hereford North Magazine, N15 Plot**				Status: Final	
Date: 26/07/17 By: AJS Checked:		Job no.: 3512463A-HHC	Section:	Sheet no.:	Rev:

Rev	Date	Details	Tel Fax
		Surface Water Drainage Design	

Part: Trench soakaway

Appendix A

CC GROUND INVESTIGATIONS LTD

TRIAL PIT LOG

Telephone: 01452 739165 , Fax: 01452 739220 , Email: info@ccground.co.uk

Pit No **TPN15**

Sheet 1 of 1

Project Name: Rotherwas Industrial Estate	Project No: **C4249**	Co-ords: E N Level: mAD	Date 12/08/2014
Location: Hereford		Dimensions: 2.00m Depth 3.20m 0.45m	Scale 1 : 25
Client: Parsons Brinkerhoff Ltd			Logged By SM

(m)	Water Levels	Samples & In Situ Testing No/Type	Depth (m)	Result	Description	Depth (m)	Level (mAD)	Legend
		B	0.50		MADE GROUND: Grass over soft brown mottled black grey and orangish brown gravelly silty CLAY with high cobble content and wood, plastic and metal fragments (<450mm). Gravel is angular to subrounded fine to coarse clinker brick concrete sandstone and siliceous material. Cobbles are angular and subangular brick and concrete.	(0.90)		
1		B	1.00		MADE GROUND: Firm black mottled grey and brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse brick, clinker and charcoal.	0.90 (0.40)		1
		B	1.50		Firm reddish brown slightly gravelly slightly sandy CLAY with low cobble content. Gravel is subrounded to rounded fine to coarse sandstone and siliceous material. Cobbles are subrounded to rounded sandstone.	1.30 (1.00)		
2		B	2.50		Reddish brown mottled grey slightly clayey gravelly SAND with low cobble content. Gravel is subrounded to rounded fine to coarse sandstone and siliceous material. Cobbles are subrounded to rounded sandstone and siliceous material.	2.30 (0.90)		2
3	Dry.				Trial pit completed at 3.20m	3.20		3
4								4

REMARKS:

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pits excavated using 0.45m wide backactor bucket.

GROUNDWATER: Not encountered.

STABILITY: Trial pit sides remained stable and vertical throughout.

BACKFILL: Trial pit backfilled with arisings

REMARKS: Soakaway testing carried out at 3.20m.

CC GROUND INVESTIGATIONS LTD

SOAKAWAY TEST

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Pit No **TPN15**

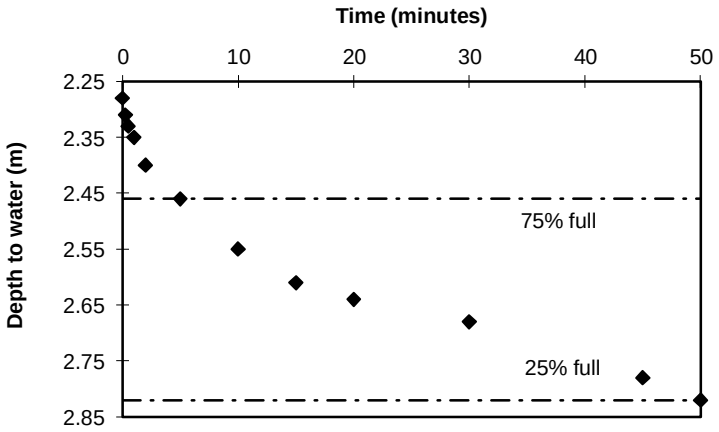
Sheet 1 of 1

Project Name: Rotherwas Industrial Estate	Project No: **C4249**	Co-ords: E N Level: mAD	Date 12/08/2014
Location: Rotherwas, Hereford			Logged By SM
Client: Parsons Brinkerhoff Ltd			Checked By

TEST 1:

LENGTH	2.00	m
BREADTH	0.45	m
DEPTH	3.20	m
WATER LEVEL	2.28	m
FILL LEVEL	0.72	m
v_{p75-25}	0.324	m^3
a_{p50}	1.782	m^2
t_{p75-25}	45	min

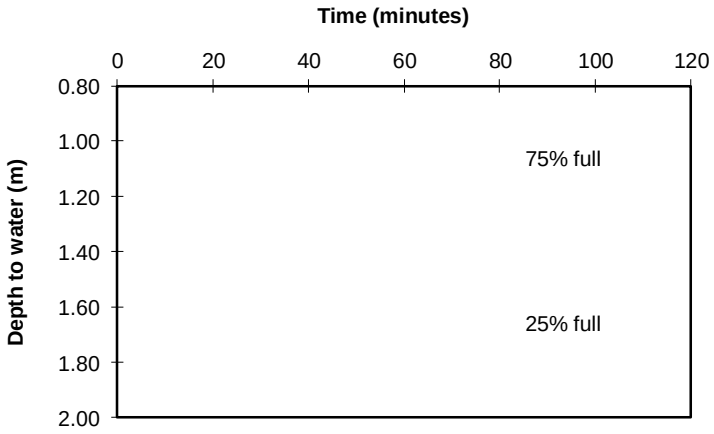
soil infiltration rate, *f* **6.73×10^{-5} ms^{-1}**



TEST 2

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

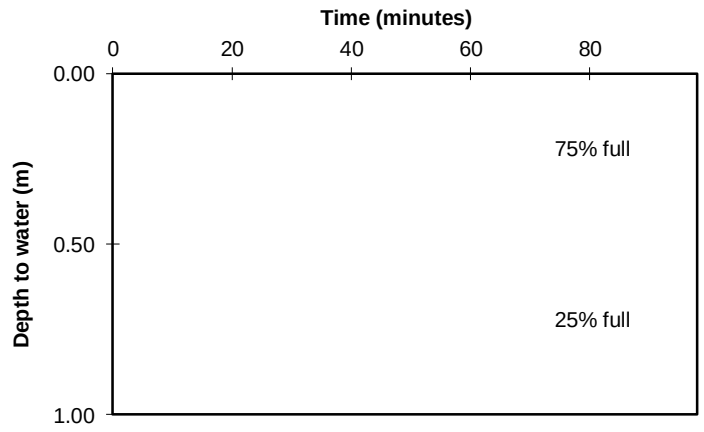
soil infiltration rate, *f* **ms^{-1}**



TEST 3

LENGTH		m
BREADTH		m
DEPTH		m
WATER LEVEL		m
FILL LEVEL		m
v_{p75-25}		m^3
a_{p50}		m^2
t_{p75-25}		min

soil infiltration rate, *f* **ms^{-1}**



REMARKS:

Test carried out in general accordance with BRE 365 (2007).

Project: **Hereford North Magazine, N15 Plot**				Status: Final	
Date: 26/07/17 By: AJS Checked:	Job no.: 3512463A-HHC	Section:	Sheet no.:	Rev:	

Rev	Date	Details	Tel Fax
		Surface Water Drainage Design	

Part: Trench soakaway

Appendix B

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

Half Drain Time : 225 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	48.532	0.782	3.5	69.7	O K
30 min Summer	48.753	1.003	4.5	89.3	O K
60 min Summer	48.954	1.204	5.4	107.3	O K
120 min Summer	49.095	1.345	6.0	119.8	O K
180 min Summer	49.136	1.386	6.2	123.4	O K
240 min Summer	49.157	1.407	6.3	125.3	O K
360 min Summer	49.168	1.418	6.4	126.3	O K
480 min Summer	49.160	1.410	6.3	125.5	O K
600 min Summer	49.141	1.391	6.3	123.9	O K
720 min Summer	49.117	1.367	6.1	121.7	O K
960 min Summer	49.061	1.311	5.9	116.8	O K
1440 min Summer	48.950	1.200	5.4	106.8	O K
2160 min Summer	48.808	1.058	4.8	94.3	O K
2880 min Summer	48.698	0.948	4.3	84.5	O K
4320 min Summer	48.541	0.791	3.6	70.4	O K
5760 min Summer	48.432	0.682	3.1	60.7	O K
7200 min Summer	48.352	0.602	2.7	53.6	O K
8640 min Summer	48.290	0.540	2.4	48.1	O K
10080 min Summer	48.242	0.492	2.2	43.8	O K
15 min Winter	48.627	0.877	3.9	78.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	92.579	0.0	18
30 min Summer	60.631	0.0	33
60 min Summer	38.009	0.0	62
120 min Summer	23.146	0.0	120
180 min Summer	17.139	0.0	152
240 min Summer	13.789	0.0	182
360 min Summer	10.104	0.0	248
480 min Summer	8.104	0.0	316
600 min Summer	6.825	0.0	386
720 min Summer	5.930	0.0	454
960 min Summer	4.747	0.0	588
1440 min Summer	3.465	0.0	852
2160 min Summer	2.526	0.0	1232
2880 min Summer	2.017	0.0	1612
4320 min Summer	1.468	0.0	2336
5760 min Summer	1.171	0.0	3064
7200 min Summer	0.982	0.0	3816
8640 min Summer	0.850	0.0	4504
10080 min Summer	0.753	0.0	5248
15 min Winter	92.579	0.0	18

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	48.875	1.125	5.1	100.2	O K
60 min Winter	49.102	1.352	6.1	120.4	O K
120 min Winter	49.267	1.517	6.8	135.1	O K
180 min Winter	49.309	1.559	7.0	138.8	O K
240 min Winter	49.325	1.575	7.1	140.3	O K
360 min Winter	49.320	1.570	7.1	139.8	O K
480 min Winter	49.292	1.542	6.9	137.3	O K
600 min Winter	49.252	1.502	6.7	133.7	O K
720 min Winter	49.208	1.458	6.6	129.8	O K
960 min Winter	49.118	1.368	6.1	121.8	O K
1440 min Winter	48.956	1.206	5.4	107.4	O K
2160 min Winter	48.769	1.019	4.6	90.8	O K
2880 min Winter	48.633	0.883	4.0	78.6	O K
4320 min Winter	48.449	0.699	3.1	62.2	O K
5760 min Winter	48.331	0.581	2.6	51.7	O K
7200 min Winter	48.249	0.499	2.2	44.5	O K
8640 min Winter	48.189	0.439	2.0	39.1	O K
10080 min Winter	48.143	0.393	1.8	35.0	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	60.631	0.0	32
60 min Winter	38.009	0.0	60
120 min Winter	23.146	0.0	116
180 min Winter	17.139	0.0	168
240 min Winter	13.789	0.0	188
360 min Winter	10.104	0.0	264
480 min Winter	8.104	0.0	340
600 min Winter	6.825	0.0	414
720 min Winter	5.930	0.0	484
960 min Winter	4.747	0.0	626
1440 min Winter	3.465	0.0	896
2160 min Winter	2.526	0.0	1280
2880 min Winter	2.017	0.0	1672
4320 min Winter	1.468	0.0	2420
5760 min Winter	1.171	0.0	3168
7200 min Winter	0.982	0.0	3888
8640 min Winter	0.850	0.0	4584
10080 min Winter	0.753	0.0	5344

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.387	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time Area Diagram

Total Area (ha) 0.413

Time (mins) From:	To:	Area (ha)
0	4	0.413

Model Details

Storage is Online Cover Level (m) 50.200

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.00000	Trench Width (m)	4.3
Infiltration Coefficient Side (m/hr)	0.24000	Trench Length (m)	40.7
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	0.30	Cap Volume Depth (m)	1.600
Invert Level (m)	47.750	Cap Infiltration Depth (m)	1.600

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.00000	Trench Width (m)	9.3
Infiltration Coefficient Side (m/hr)	0.24000	Trench Length (m)	13.1
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	0.30	Cap Volume Depth (m)	1.600
Invert Level (m)	47.750	Cap Infiltration Depth (m)	1.600

Project: **Hereford North Magazine, N15 Plot**					Status: Final
Date: 26/07/17 By: AJS Checked:		Job no.: 3512463A-HHC	Section:	Sheet no.:	Rev:

Rev	Date	Details	Tel Fax
		Surface Water Drainage Design	

Part: Trench soakaway

Appendix C

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

Half Drain Time : 265 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
15 min Summer	48.763	1.013	4.6	90.2	O K
30 min Summer	49.061	1.311	5.9	116.7	O K
60 min Summer	49.332	1.582	7.1	140.9	O K
120 min Summer	50.216	2.466	7.2	159.0	FLOOD
180 min Summer	50.222	2.472	7.2	164.3	FLOOD
240 min Summer	50.224	2.474	7.2	166.2	FLOOD
360 min Summer	50.224	2.474	7.2	166.4	FLOOD
480 min Summer	50.222	2.472	7.2	164.8	FLOOD
600 min Summer	50.219	2.469	7.2	161.9	FLOOD
720 min Summer	50.216	2.466	7.2	158.3	FLOOD
960 min Summer	50.208	2.458	7.2	150.2	FLOOD
1440 min Summer	49.275	1.525	6.9	135.8	O K
2160 min Summer	49.086	1.336	6.0	119.0	O K
2880 min Summer	48.940	1.190	5.3	106.0	O K
4320 min Summer	48.734	0.984	4.4	87.6	O K
5760 min Summer	48.593	0.843	3.8	75.0	O K
7200 min Summer	48.491	0.741	3.3	66.0	O K
8640 min Summer	48.411	0.661	3.0	58.9	O K
10080 min Summer	48.350	0.600	2.7	53.4	O K
15 min Winter	48.886	1.136	5.1	101.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
15 min Summer	119.875	0.0	18
30 min Summer	79.223	0.0	33
60 min Summer	49.937	0.0	62
120 min Summer	30.437	16.5	120
180 min Summer	22.485	21.8	164
240 min Summer	18.031	23.8	192
360 min Summer	13.127	24.0	256
480 min Summer	10.486	22.3	324
600 min Summer	8.803	19.4	392
720 min Summer	7.627	15.8	460
960 min Summer	6.077	7.7	590
1440 min Summer	4.405	0.0	852
2160 min Summer	3.188	0.0	1232
2880 min Summer	2.531	0.0	1612
4320 min Summer	1.826	0.0	2336
5760 min Summer	1.447	0.0	3064
7200 min Summer	1.208	0.0	3816
8640 min Summer	1.041	0.0	4504
10080 min Summer	0.918	0.0	5248
15 min Winter	119.875	0.0	18

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

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Volume (m³)	Status
30 min Winter	49.220	1.470	6.6	130.9	O K
60 min Winter	50.216	2.466	7.2	158.7	FLOOD
120 min Winter	50.239	2.489	7.2	181.2	FLOOD
180 min Winter	50.246	2.496	7.2	188.5	FLOOD
240 min Winter	50.247	2.497	7.2	189.5	FLOOD
360 min Winter	50.245	2.495	7.2	187.7	FLOOD
480 min Winter	50.241	2.491	7.2	183.9	FLOOD
600 min Winter	50.236	2.486	7.2	178.3	FLOOD
720 min Winter	50.229	2.479	7.2	171.9	FLOOD
960 min Winter	50.216	2.466	7.2	158.5	FLOOD
1440 min Winter	49.284	1.534	6.9	136.6	O K
2160 min Winter	49.036	1.286	5.8	114.5	O K
2880 min Winter	48.858	1.108	5.0	98.6	O K
4320 min Winter	48.619	0.869	3.9	77.4	O K
5760 min Winter	48.468	0.718	3.2	64.0	O K
7200 min Winter	48.364	0.614	2.8	54.7	O K
8640 min Winter	48.288	0.538	2.4	47.9	O K
10080 min Winter	48.229	0.479	2.2	42.7	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Time-Peak (mins)
30 min Winter	79.223	0.0	32
60 min Winter	49.937	16.2	62
120 min Winter	30.437	38.7	118
180 min Winter	22.485	46.0	174
240 min Winter	18.031	47.0	224
360 min Winter	13.127	45.2	278
480 min Winter	10.486	41.4	354
600 min Winter	8.803	35.8	428
720 min Winter	7.627	29.4	500
960 min Winter	6.077	16.0	636
1440 min Winter	4.405	0.0	896
2160 min Winter	3.188	0.0	1280
2880 min Winter	2.531	0.0	1672
4320 min Winter	1.826	0.0	2420
5760 min Winter	1.447	0.0	3168
7200 min Winter	1.208	0.0	3888
8640 min Winter	1.041	0.0	4584
10080 min Winter	0.918	0.0	5344

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Shortest Storm (mins)	15
Ratio R	0.387	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+30

Time Area Diagram

Total Area (ha) 0.413

Time (mins) From:	To:	Area (ha)
0	4	0.413

Model Details

Storage is Online Cover Level (m) 50.200

Complex Structure

Trench Soakaway

Infiltration Coefficient Base (m/hr)	0.00000	Trench Width (m)	9.3
Infiltration Coefficient Side (m/hr)	0.24000	Trench Length (m)	13.1
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	0.30	Cap Volume Depth (m)	1.600
Invert Level (m)	47.750	Cap Infiltration Depth (m)	1.600

Trench Soakaway

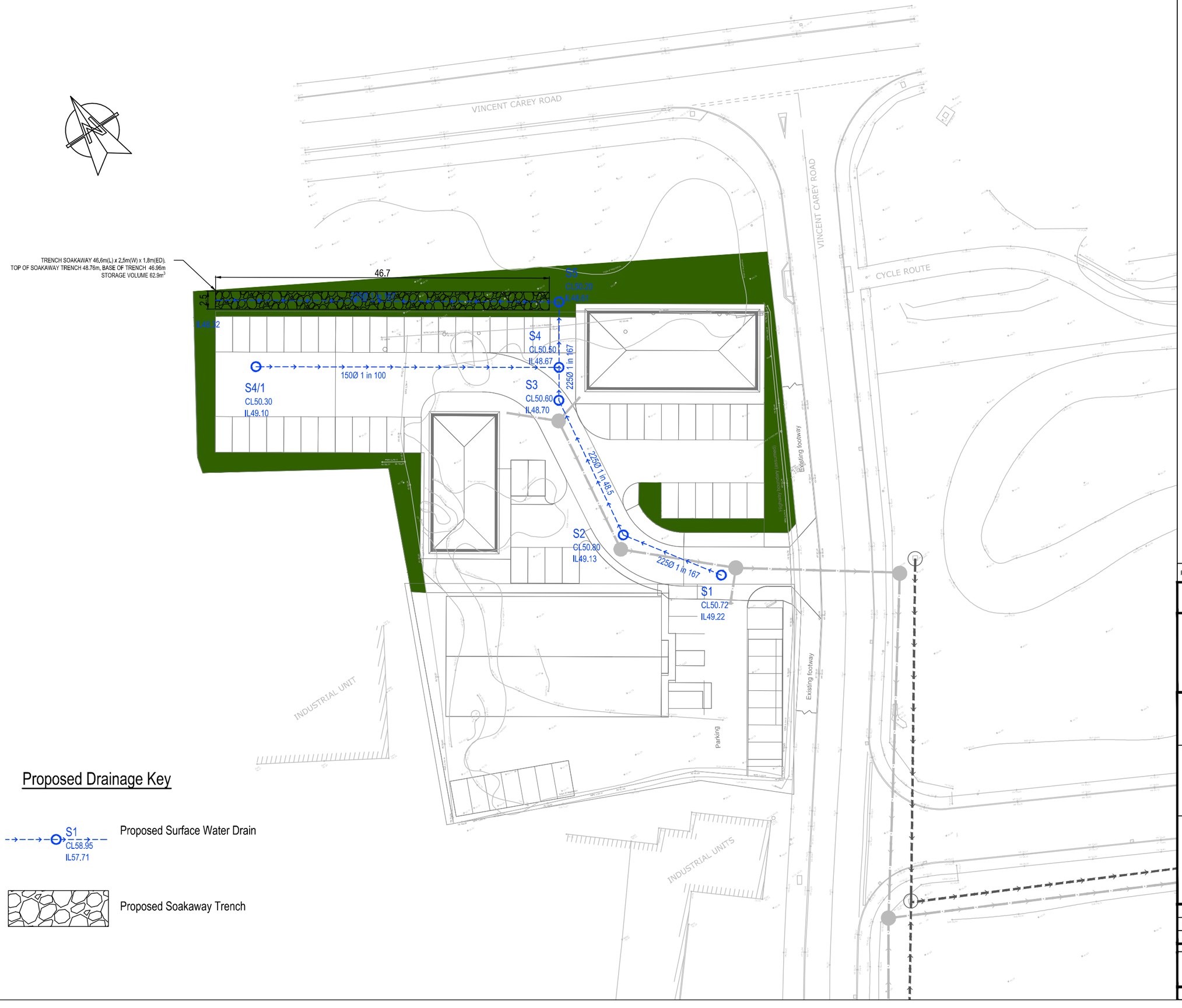
Infiltration Coefficient Base (m/hr)	0.00000	Trench Width (m)	4.3
Infiltration Coefficient Side (m/hr)	0.24000	Trench Length (m)	40.7
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	0.30	Cap Volume Depth (m)	1.600
Invert Level (m)	47.750	Cap Infiltration Depth (m)	1.600

Project: **Hereford North Magazine, N15 Plot**					Status: Final
Date: 26/07/17 By: AJS Checked:		Job no.: 3512463A-HHC	Section:	Sheet no.:	Rev:

Rev	Date	Details	Tel Fax
		Surface Water Drainage Design	

Part: Trench soakaway

Appendix D



Proposed Drainage Key

S1
CL58.95
IL57.71

Proposed Surface Water Drain

Proposed Soakaway Trench

NOTES

1. DESIGN BASED ON ANCER SPA N15 LAYOUT AND TOPOGRAPHICAL SURVEY N15
2. SOAKAWAY DESIGN BASED ON AN INFILTRATION RATE OF 5 x 10^{-5} m/s, INTERPOLATED FROM C.C. GROUND INVESTIGATIONS REPORT. THE ACTUAL INFILTRATION RATE AT THE SOAKAWAY TRENCH LOCATION, AND DESIGN DEPTH MUST BE CONFIRMED
3. SURFACE WATER DRAINAGE LAYOUT IS INDICATIVE, SUBJECT TO APPROVAL AND DETAILED DESIGN

Rev	Date	Description	By	Chk	App

FOR COMMENT

PARSONS BRINCKERHOFF
29 Cathedral Road
Cardiff
CF11 9HA
Tel: 44-(0)29-2082-7000
Fax: 44-(0)29-2082-7001

Client:
HEREFORDSHIRE COUNCIL

Site/Project:
ENTERPRISE ZONE
HEREFORDSHIRE
PLOT N15

Title:
SURFACE WATER
DRAINAGE LAYOUT

Drawn:	NC		Checked:	AJS	
Designed:	NC		Approved:	AJS	
Date:	04/02/2015	Scale: 1:500 A3	Sheet:	1 of 1	

Project Number:	Drawing Number:	Revision:
3512463A - HHC	SK_500_01	

Project Number: 3512463A
Drawing Number: SK-500-01
Revision:

File Name: H:\HHI\JOBS\3512463A-HHC EZ Herefordshire - N Magazine\ACAD\Drawings\3512463_SK_500_01.dwg
Login: Coulson, Nick
Plot Date: 05/02/2015 08:13:48

SCHEDULE OF FLOOR SPACE
B1 (Office & Amenities) - 251.21m2
B2 (Distribution) - 170.24m2

SC1	353263.809	237909.181	50.209
SC2	353039.219	237973.284	50.522
SC3	352688.326	238067.435	50.740
IM1	353116.524	238111.482	50.284
IM2	353088.692	238148.951	50.267

No Parking (area of attenuation)

Local decorative gravel

SCALE (m) 1:50
SCALE (m) 1:100
SCALE (m) 1:200
SCALE (m) 1:500
SCALE (m) 1:1250
SCALE (m) 1:2500

All figure dimensions and levels must be checked on site. Do not scale dimensions or levels from this drawing for the purpose of setting out or ordering components. If in doubt check with the consultant. All scales are as indicated below.

All drainage used by more than one dwelling is now a public sewer, if not previously adopted, and any building over or within 3 metres may require a "building over agreement" with Welsh Water. It will be the responsibility of the client to enter into this agreement.

Revisions

	date	details
A	17/07/17	Layout revised, fencing altered
B	18/07/17	Landscaping & FFL added
C	21/07/17	Fencing revised, external plant added

scales 1:200 (A1 print)

date 07.07.17 drawn by SV/jp

title
Proposed Unit
Plot N15
Skylon Park
Rotherwas
Hereford

client
Melcon (Hereford) Ltd

drawing no. 1353-1 rev. C

John Phipps
Architectural Consultant
Bank Lodge
Coldwells Road Holmer Hereford HR1 1LH
01432 276424
Email: johnphipps@ukgateway.net

Project: **Hereford North Magazine, N15 Plot**				Status: Final	
Date: 26/07/17 By: AJS Checked:	Job no.: 3512463A-HHC	Section:	Sheet no.:	Rev:	
Rev:	Date:	Details: Surface Water Drainage Design		Tel: Fax:	
Part: Trench soakaway					

Appendix E

Rev: E
Dwg No: 005
Job No: 3512463A-HHC

CONTRACTOR TO CONFIRM EXISTING PIPE LOCATION PRIOR TO CONSTRUCTING S12

TRENCH SOAKAWAY 1.6m(ED) STORAGE VOLUME 243m³

EXISTING CATCHPIT, INTERCEPTOR AND PIPEWORK TO BE REMOVED TO TIP

CONTRACTOR TO POSITION STUB OF SOAKAWAY TO AVOID MATURE TREE, AREA OF ADDITIONAL SOAKAWAY 111m²

PROPOSED PETROL INTERCEPTOR WITH 110Ø VENT PIPE AND TELEMETRY. PETROL INTERCEPTOR TO BE CAPABLE OF TREATING 4100m² OF IMPERMEABLE AREA. HIGH LEVEL ALARM TO BE INSTALLED AT A LATER DATE BY HEREFORDSHIRE COUNCIL AS DEVELOPMENT PROGRESSES

SITE TO DRAIN VIA SOAKAWAYS ON-SITE

PUBLIC SURFACE WATER SEWERS AS SHOWN ON DWR CYMRU WELSH WATER RECORDS, EXACT ROUTE UPSTREAM OF EXS5 UNKNOWN.

EXISTING SURFACE WATER DRAIN BETWEEN S4 AND EXS5 TO BE ABANDONED, EXCAVATED AND BACKFILLED WITH SUITABLE MATERIAL, COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EMPLOYER

MANHOLES TO BE REMOVED

PETROL INTERCEPTOR TO BE REMOVED TO TIP

PROPOSED PETROL INTERCEPTOR WITH 110Ø VENT PIPE AND TELEMETRY. PETROL INTERCEPTOR TO BE CAPABLE OF TREATING 5555m² OF IMPERMEABLE AREA HIGH LEVEL ALARM TO BE INSTALLED AT A LATER DATE BY HEREFORDSHIRE COUNCIL AS DEVELOPMENT PROGRESSES

MHS6 TO BE CONSTRUCTED ON EXISTING STORM SEWER, APPROXIMATE INVERT LEVEL OF 46.63m AOD TO BE CONFIRMED ON SITE.

MANHOLE SCHEDULE - STORM NET 1

MANHOLE REF:	CO-ORDINATES:	COVER & INVERT:	CONNECTED PIPES:	MANHOLE DETAILS:	COMMENTS
S1	353126.120m 238095.042m	CL:50.380m IL:48.560m	PIPE: S 1.000 IL: 48.560	Manhole Type 2 D400	EXISTING
S2	353099.479m 238055.070m	CL:50.380m IL:48.300m	PIPE: S 1.001 IL: 48.300 PIPE: S 1.000 IL: 48.400	Manhole Type 2, 1.5m Ø D400	EXISTING
S3	353148.395m 238031.489m	CL:50.380m IL:47.920m	PIPE: S 1.002 IL: 47.920 PIPE: S 1.001 IL: 47.980	Manhole Type 2, 1.5m Ø D400	EXISTING
S4	353196.584m 238007.358m	CL:50.380m IL:47.610m	PIPE: S 1.002 IL: 47.640 PIPE: S 1.003 IL: 47.610	Manhole Type 2, 1.5m Ø D400	EXISTING
S5	353206.169m 238002.492m	CL:50.380m IL:47.510m	PIPE: S 1.003 IL: 47.510 PIPE: S 1.004 IL: 47.510	Manhole Type 2, 1.5m Ø D400	NEW MH
S6	353297.209m 237957.223m	CL:50.380m IL:46.630m	PIPE: S 1.004 IL: 46.630	Manhole Type 1, 1.5m Ø D400	NEW MANHOLE BUILT ON EXISTING SEWER

MANHOLE SCHEDULE - Storm Net 2

MANHOLE REF:	CO-ORDINATES:	COVER & INVERT:	CONNECTED PIPES:	MANHOLE DETAILS:	COMMENTS
S8	353094.979m 238126.806m	CL:50.300m IL:48.950m	PIPE: S2.000 IL: 48.950 PIPE: S2.001 IL: 48.950	Manhole Type 2, 1.2m Ø D400	NEW MH
S9	353095.587m 238136.228m	CL:50.300m IL:48.541m	PIPE: S2.001 IL: 48.541 PIPE: S2.002 IL: 48.541	Manhole Type 2, 1.2m Ø D400	NEW MH
S10	353099.639m 238148.844m	CL:50.300m IL:48.258m	PIPE: S2.002 IL: 48.408 PIPE: S2.003 IL: 48.258 PIPE: 3.000 IL: 48.558	Manhole Type 2, 1.2m Ø D400	NEW MH
S10/1	353061.251m 238170.960m	CL:50.300m IL:48.853m	PIPE: 3.000 IL: 48.853	Catchpit, 1.2m Ø D400	NEW CATCHPIT
S11	353102.949m 238154.352m	CL:50.300m IL:48.215m	PIPE: S2.003 IL: 48.215 PIPE: S2.004 IL: 48.215	Catchpit, 1.2m Ø D400	NEW CATCHPIT
S12	353063.462m 238178.082m	CL:50.300m IL:48.164m	PIPE: S2.004 IL: 48.164	Catchpit, 1.2m Ø D400	NEW CATCHPIT

NOTES

1. DO NOT SCALE OFF THIS DRAWING. USE DIMENSIONS GIVEN ONLY.
2. ALL LEVELS ARE IN METERS ABOVE ORDNANCE DATUM (AOD).
3. ALL PIPEWORK AND MANHOLES TO BE CONSTRUCTED TO SEWERS FOR ADOPTION (7th EDITION).
4. FOR MANHOLE DETAILS AND PIPELINE GRADIENTS REFER TO DRAWINGS 006 AND 007.
5. REFER TO DRAWING 008 FOR CATCHPIT AND PETROL INTERCEPTOR CONSTRUCTION DETAILS
6. FOR UTILITY INFORMATION REFER TO UPL DRAWING E000202954-MU-01 REV 02 AND WPD DIVERSION DRAWING 1700944
7. EXISTING SURFACE WATER NETWORK, S1 - S4, SHOWN ON AS SURVEYED BASE. ACTUAL POSITION OF PIPES WITHIN MANHOLE CHAMBERS MAY VARY SLIGHTLY ON SITE.
8. NEW COVER LEVELS SHOWN ARE BASED ON Q1000 FLOOD LEVEL FROM JBA REPORT, ROTHERWAS INDUSTRIAL ESTATE: REVIEW OF FLOOD MITIGATION STRATEGY CONTRACTOR TO VISIT SITE AND SURVEY EXISTING MANHOLES TO ASCERTAIN WHETHER CHANGES IN COVER LEVEL CAN BE FACILITATED BY EXTRA COURSES OF BRICKWORK (MAX 4) OR ADDITIONAL PRECAST CONCRETE RINGS.
9. COVER LEVELS FOR CHAMBERS S8 TO S12 TO BE CONFIRMED UPON COMPLETION OF THE ACCESS ROAD DESIGN. COVER LEVELS SHOWN ARE WITHIN +/- 50mm.
10. ON PLOT SURFACE WATER SYSTEMS, IN THE FORM OF SOAKAWAYS, TO BE UTILISED, FOR DEVELOPMENT PARCELS.
11. WHERE EXISTING CHAMBERS ARE AFFECTED BY NEW CONNECTIONS OR ABANDONED PIPES, CONTRACTOR TO MAKE GOOD AND REPAIR BENCHING OF MANHOLE IN ACCORDANCE WITH THE REQUIREMENTS OF SEWERS FOR ADOPTION 7TH EDITION AND THE CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY.

KEY

- SURFACE WATER MANHOLE
- SURFACE WATER SEWER
- PROPOSED PRIVATE SOAKAWAY
- PROPOSED PETROL INTERCEPTOR
- PRIVATE FOUL SEWER AND MANHOLE
- S104 FOUL SEWER AND MANHOLE
- FOUL MANHOLE EXISTING
- FOUL SEWER EXISTING
- SEWER TO BE ABANDONED
- HC SITE BOUNDARY
- ADJOINING SITE BOUNDARY

HEALTH AND SAFETY INFORMATION

SIGNIFICANT OR EXCEPTIONAL RISKS ARE IDENTIFIED BELOW

CONSTRUCTION PHASE

1. PLEASE REFER TO THE HAZARD RISK REGISTER AND THE WORKS INFORMATION FOR DETAILS OF THE RISKS ASSOCIATED WITH THIS WORK.
2. IN PREPARATION OF CONSTRUCTION METHOD STATEMENTS CONSIDERATION SHOULD BE GIVEN TO THE CLOSE PROXIMITY OF ANY STRUCTURES THAT MAY BE AFFECTED BY CONSTRUCTION.
3. RESIDUAL HAZARDS ARE LISTED HERE AND REFERENCED ON THE DRAWING.
   i. EXISTING DRAINAGE
   ii. EXISTING BURIED UTILITIES
4. THE CONTRACTOR SHALL REFER TO STATUTORY UNDERTAKERS LAYOUT DRAWINGS AND IDENTIFY LOCATIONS OF EXISTING UNDERGROUND SERVICES PRIOR TO CARRYING OUT EXCAVATION WORKS.

MAINTENANCE / OPERATION / DECOMMISSIONING / DEMOLITION PHASES

1. PLEASE REFER TO THE HAZARD RISK REGISTER AND THE MAINTENANCE AND REPAIR STRATEGY FOR DETAILS OF THE RISKS ASSOCIATED WITH THE MAINTENANCE, OPERATION, DECOMMISSIONING AND DEMOLITION PHASES.
2. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE HEALTH AND SAFETY FILE(S) PRODUCED AND HANDED OVER ON COMPLETION OF THIS PROJECT.
3. RESIDUAL HAZARDS ARE LISTED HERE AND REFERENCED ON THE AS-BUILT DRAWING.
   i. NOTHING SIGNIFICANT OR UNUSUAL

Rev	Date	Description	By	Chk	App
E	06/01/16	S12-S8 IL REVISED	JBM	AJS	AJS
D	09/12/15	UPDATED FOLLOWING COMMENTS 08/12/15	JBM	AJS	AJS
C	26/11/15	UPDATED TO INCORPORATE PJE BUILDING	NC	AJS	AJS
B	21/10/15	CONSTRUCTION ISSUE	JBM	AJS	AJS
A	06/01/15	Petrol interceptor added to N15 Parcel	ZAU	NC	AJS

CONSTRUCTION ISSUE

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Client: HEREFORDSHIRE COUNCIL

Site/Project: ENTERPRISE ZONE HEREFORDSHIRE PLOT N15-N22

Title: SURFACE WATER DRAINAGE LAYOUT

Drawn: ZAU		Checked: NC	
Designed: ZAU		Approved: AJS	
Date: 08/01/2015	Scale: 1:500, NTS	A1	Sheet: 1 of 1
Project Number: 3512463A-HHC	Drawing Number: 005		Revision: E

Login: Spiller, Adam
Plot Date: 08/01/2016 12:03:27
File Name: H:\HHNJOBS\3512463A-HHC E2 Herefordshire - N Magazine\ACAD\Drawings\005.dwg