

Appendix A

DRAWINGS

wsp



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NOTES

1. ALL LEVELS ARE IN METRES ABOVE ORDNANCE DATUM.
2. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
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6. DRAWING BASED ON:
6.1. DETAILED TOPOGRAPHIC SURVEY, NAC SURVEY'S LTD (NOVEMBER 2018).
6.2. SEVERN TREAT WATER ASSET MAPPING (AUGUST 2019).


KEY

- INDICATE SITE BOUNDARY
- EXISTING SPRING
- EXISTING SEVERN TREAT WATER
- COMBINED RISING MAIN (WITH 5m EASEMENT)
- EXISTING PUMPING STATION
- EXISTING ATTENUATION AREA (SERVING EXISTING DEVELOPMENT)
- EXISTING SURFACE WATER FLOW ROUTE

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	31/03/2020	PS	FIRST ISSUE

S2 - FOR INFORMATION



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CLIENT: CENTRAL MIDLANDS ESTATES LTD

ARCHITECT: BNB ARCHITECTS

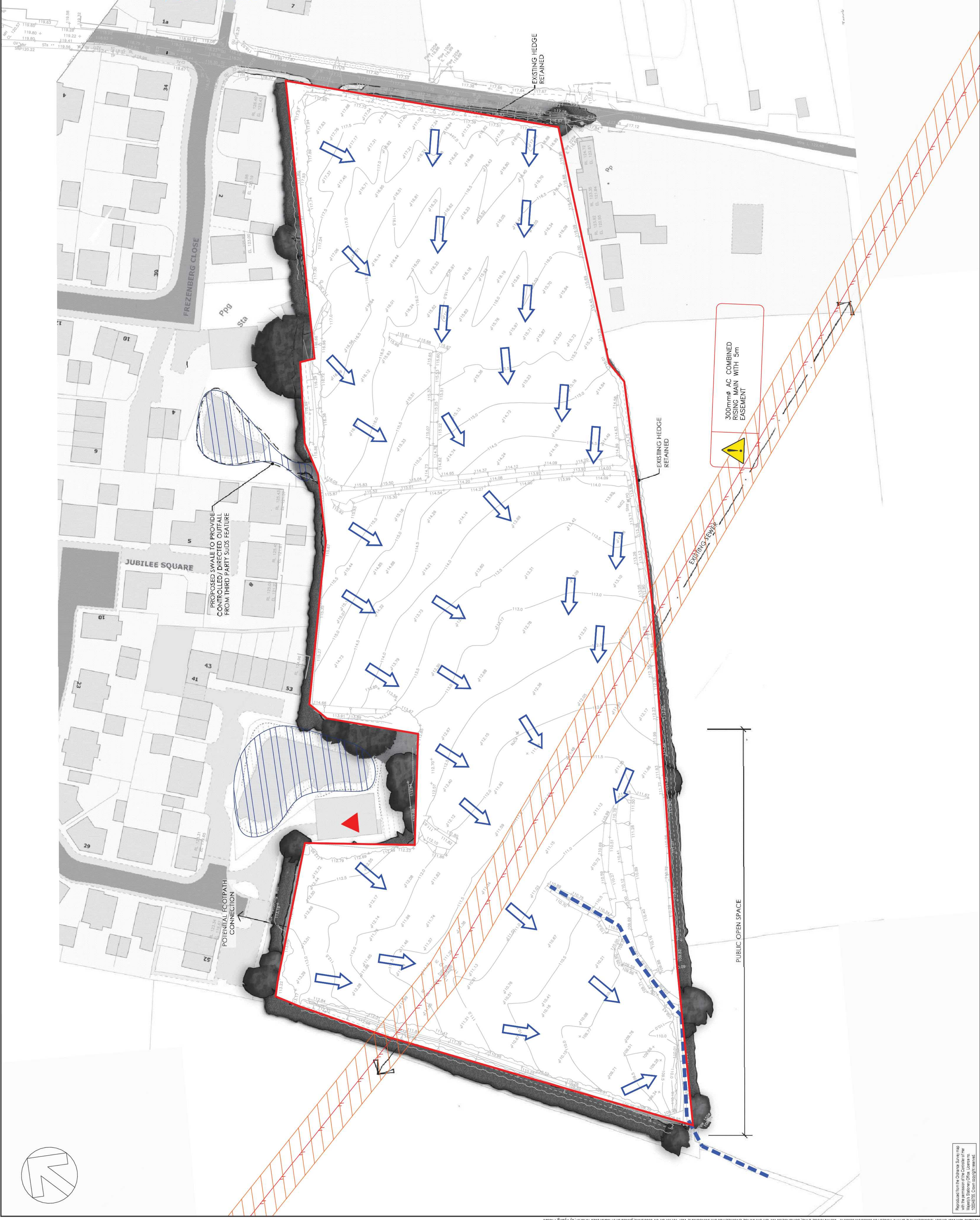
SITE/PROJECT: WORKHOUSE LANE, BURBAGE

TITLE: EXISTING SURFACE WATER DRAINAGE FEATURES

SCALE @ A1:	CHECKED:	DW:	APPROVED:	DW:
PROJECT NO:	DESIGNED:	PS:	DRAWN:	DATE:
70080615	PS	PS	March 20	

DRAWING No: WHL-WSP-XX-XX-SK-CV-0500

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6. DRAWING BASED ON:
6.1. CONCEPT LAYOUT (REF NO. 3581-SK01) PRODUCED BY BHB ARCHITECTS.
7. ILLUSTRATIVE DRAINAGE STRATEGY BASED ON:
7.1. CALCULATIONS USING MICRODRAINAGE SOURCE CONTROL MODEL. SUBJECT TO DETAILED DESIGN.
- 7.2. DRAINAGE CATCHMENT ASSUMED 65% IMPERMEABLE.
- 7.3. PROPOSED QBAR DISCHARGE RATE 6.0 l/s.
- 7.4. ATTENUATION BASIN ASSUMED 1m DEEP, 300mm FREEBOARD.
8. IT IS ANTICIPATED THAT ALL SURFACE WATER DRAINAGE FEATURES WILL BE FULLY LINKED TO PREVENT GROUNDWATER INGRESS.
9. NO LEVELS DESIGN HAS BEEN UNDERTAKEN AT THIS DESIGN STAGE. IT IS ANTICIPATED THAT SIGNIFICANT PATHWAYS WILL BE REQUIRED TO DESIGN THE DRAINAGE NETWORK.
10. NO CLASH DETECTION UNDERTAKEN AT THIS STAGE.

KEY

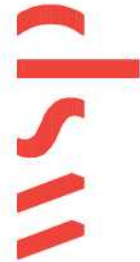
- INDICATE SITE BOUNDARY
- EXISTING SPRING
- EXISTING SEVERN TRENT WATER COMBINED RISING MAIN (WITH 5m EASEMENT)
- EXISTING PUMPING STATION
- EXISTING ATTENUATION AREA (SERVING EXISTING DEVELOPMENT)
- PROPOSED SURFACE WATER DRAINAGE CATCHMENT
- PROPOSED CUT OFF DITCH
- PROPOSED CONVEYANCE SWALE
- PROPOSED ATTENUATION BASIN WITH LOW FLOW CHANNEL
- PROPOSED SURFACE WATER SEWER
- PROPOSED HEADWALL
- PROPOSED SURFACE WATER MANHOLE

DRAINAGE CATCHMENT DETAILS			
PROPOSED IMPERMEABLE AREA [ha]	PROPOSED STORAGE VOLUME [m³] REQUIRED FOR THE 1 IN 100 YEAR + CLIMATE CHANGE EVENT	PROPOSED DISCHARGE RATE [l/s]	
0.89	630	6.0	TOTAL

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P01	31/03/2020	PS	FIRST ISSUE

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CENTRAL MIDLANDS ESTATES LTD

BNB ARCHITECTS

WORKHOUSE LANE, BURBAGE

INDICATIVE SURFACE WATER DRAINAGE STRATEGY

SCALE @ A1:	CHECKED	DW	APPROVED	DW
1:500				
PROJECT NO	DESIGNED	PS	DRAWN	DATE
70060615				March 20
DRAWING No	REF			
WHL-WSP-XX-XX-SK-CV-0501				P01

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 - 6.2. DETAILED TOPOGRAPHIC SURVEY, NAC SURVEYS LTD (NOVEMBER 2018).
 - 6.3. SEVERN TREAT WATER ASSET MAPPING, AUGUST 2019.
7. ILLUSTRATIVE DRAINAGE STRATEGY BASED ON:
 - 7.1. CALCULATIONS USING MICRODRAINAGE SOURCE CONTROL MODEL, SUBJECT TO DETAILED DESIGN.
 - 7.2. DRAINAGE CATCHMENT ASSUMED 65% IMPERMEABLE.
 - 7.3. PROPOSED OBAR DISCHARGE RATE 6.0l/s.
 - 7.4. ATTENUATION BASIN ASSUMED 1m DEEP, 300mm FREEBOARD.
- 7.5. EXCEEDANCE DESIGN SUBJECT TO DETAILED EARTHWORKS DESIGN.
8. IT IS ANTICIPATED THAT ALL SURFACE WATER DRAINAGE FEATURES WILL BE FULLY UNDERTAKEN TO PREVENT GROUNDWATER INGRESS.
9. NO LEVELS DESIGN HAS BEEN UNDERTAKEN AT THIS DESIGN STAGE. IT IS ANTICIPATED THAT SIGNIFICANT EARTHWORKS WILL BE REQUIRED DUE TO THE EXISTING GROUNDWATER LEVELS.
10. NO CUSH DETECTION UNDERTAKEN AT THIS STAGE.

KEY

- INDICATIVE SITE BOUNDARY
- EXISTING SPRING
- EXISTING SEVERN TREAT WATER COMBINED RISING MAIN (WITH 5m EASEMENT)
- EXISTING PUMPING STATION
- EXISTING ATTENUATION AREA (SERVING EXISTING DEVELOPMENT)
- PROPOSED SURFACE WATER DRAINAGE CATCHMENT
- PROPOSED CUT OFF DITCH
- PROPOSED CONVEYANCE SWALE
- PROPOSED ATTENUATION BASIN WITH LOW FLOW CHANNEL
- PROPOSED SURFACE WATER SEWER
- PROPOSED HEADWALL
- PROPOSED SURFACE WATER MANHOLE
- PROPOSED SURFACE WATER EXCEEDANCE FLOW ROUTE

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT THIS DRAWING IS FOR INFORMATION ONLY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.

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P01	31/03/2020	PS	FIRST ISSUE		

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CENTRAL MIDLANDS ESTATES LTD

BNB ARCHITECTS

WORKHOUSE LANE, BURBAGE

INDICATIVE SURFACE WATER EXCEEDANCE STRATEGY

SCALE @ A1:	CHECKED:	DW:	APPROVED:	DW:
1:500				
PROJECT NO:	DESIGNED:	PS:	DRAWN:	DATE:
70060615				March 20
DRAWING NO:	REF:	WHL-WSP-XX-XX-SK-CV-0502	P01	
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6. THIS DRAWING IS NOT TO BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF THE SURVEYOR.
- 6.1. CONCEPT LAYOUT (REF NO. 3581-SK01) PRODUCED BY BHB ARCHITECTS.
- 6.2. DETAILED TOPOGRAPHIC SURVEY, N/C SURVEY'S LTD (NOVEMBER 2018).
- 6.3. SEVERN TRENT WATER ASSET MAPPING, AUGUST 2019.
7. INDICATIVE CONNECTION INTO PUMPING STATION NET WELL OFF SITE SUBJECT TO CONFIRMATION FROM ASSET OWNER.
8. NO LEVELS DESIGN HAS BEEN UNDERTAKEN AT THIS DESIGN STAGE. IT IS ANTICIPATED THAT SIGNIFICANT EARTHWORKS WILL BE REQUIRED DUE TO THE EXISTING GROUNDWATER LEVELS.
9. NO CLASH DETECTION UNDERTAKEN AT THIS STAGE.


KEY

- INDICATIVE SITE BOUNDARY
- EXISTING SEVERN
- EXISTING SEVERN TREAT WATER
- COMBINED RISING MAIN (WITH 5m EASEMENT)
- EXISTING PUMPING STATION
- EXISTING ATTENUATION AREA (SERVING EXISTING DEVELOPMENT)
- PROPOSED CUT OFF DITCH
- PROPOSED FOUL SEWER
- PROPOSED FOUL RISING MAIN
- PROPOSED FOUL PUMPING STATION WITH 15m CORDON SANITARE

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.

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CLIENT CENTRAL MIDLANDS ESTATES LTD
ARCHITECT BNB ARCHITECTS
SITE/PROJECT WORKHOUSE LANE, BURBAGE
TITLE INDICATIVE FOUL WATER DRAINAGE STRATEGY

SCALE @ A1: 1:500	CHECKED DW	APPROVED DW
PROJECT NO 70080615	DESIGNED PS	DRAWN PS
DRAWING NO WHL-WSP-XX-XX-SK-CV-0503	DATE March 20	REV P01
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1. The Survey is related to OS Grid Base (OSGB36 15).
2. All Levels are related to OS Datum (OSGB36 15).
3. The Information shown on this drawing is surveyed to the accuracy of the base scale shown.
4. No entry is meant to be not been undertaken on the ground. This should be checked with local authority records or on site prior to the start of any work.
5. Boundaries shown are physical features and may not represent legally conveyed ownership.
6. Some service or features on the ground may not be shown as they are buried and/or underground.
7. Where adjacent buildings have been surveyed and shown on the drawing, they are shown as observed from one side of sight.
8. The plan should only be used for its original purpose. ICD Survey Ltd accepts no responsibility for any errors or omissions. It is any party other than the original client.

[illegible]

Feature List	
Height	Overhead Electric Line
Fence	Overhead Telecom Line
Gate	Individual Tree-Seed
Site	Shrubline
Footpath	Building
Kachire	Well
Vegetable Patch or Change of Surface	RV/Well
Green Unim	Retaining Wall
Fly	
Box	
Box	
Box	

STN	SURVEY CONTROL		LEVEL
	EASTINGS	NORTHINGS	
N122	444263.268	291836.352	113.975
N124	444263.008	291831.867	111.981
N125	444326.559	291831.867	111.981
N127	444326.355	291916.068	117.272
N128	444328.957	291981.268	117.760
N129	444330.024	291942.025	117.236
N130	444328.957	292040.816	118.200
N131	444323.945	292040.816	118.200
N132	444276.901	292054.274	105.676
N133	444276.275	292041.244	113.344

REV	DATE	DESCRIPTION	BY	APP.
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The Old Police Station,
South Street,
Ashby de la Zouch,
Leicestershire
LE85 1BS

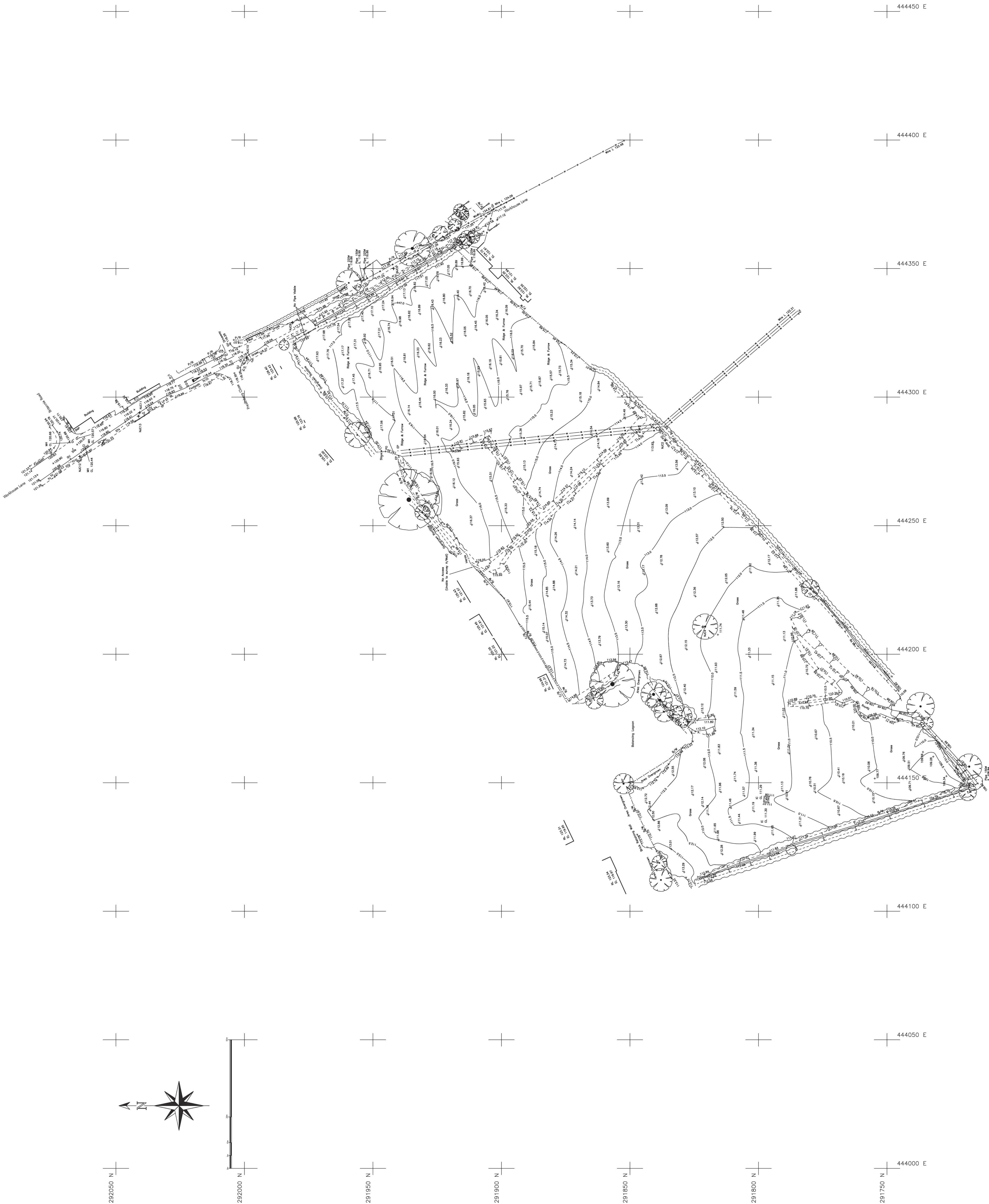
Telephone ● 01530 414251
Mobile ● 07878 792994

Topographical Surveys • Building Surveys • GPS Surveys • Setting Out
Dimensional Control • Monitoring Surveys • Ground Modelling • Volumetric Calculations

Land off
Workhouse Lane,
Burbage

Project Title

Drawn	LD	Checked	IG	Authorized	NJC
Date	22/11/2018	Scale	1/500	Sheet size	A0
Eng. No.				Revision	





Appendix B


CALCULATIONS

wsp

Appendix B.1



GREENFIELD RUN-OFF

WSP Group Ltd		Page 1
.	Workhouse Lane, Burbage	
.		
.		
Date 30/03/2020	Designed by PS	
File	Checked by DW	
XP Solutions	Source Control 2018.1	

IH 124 Mean Annual Flood

Input

Return Period (years)	100	Soil	0.450
Area (ha)	50.000	Urban	0.000
SAAR (mm)	700	Region Number	Region 4

Results 1/s

QBAR Rural 219.7
QBAR Urban 219.7

Q100 years 564.5

Q1 year 182.3
Q2 years 196.9
Q5 years 270.2
Q10 years 327.3
Q20 years 390.4
Q25 years 412.5
Q30 years 430.4
Q50 years 483.7
Q100 years 564.5
Q200 years 663.4
Q250 years 696.3
Q1000 years 913.8