LEES
ROXBURGH
Consulting Engineers

LEES ROXBURGH LIMITED
Genesis Centre, Science Park South,
Birchwood, Warrington, WA3 7BH
Telephone: 01925 812898 Fax: 01925 838864
Email: office@leesroxburgh.co.uk
Web Site: www.leesroxburgh.co.uk

Report No: 5598/R1

NORTH ROAD,
GLOSSOP

FLOOD RISK ASSESSMENT

MAY 2013

Prepared By: **John E Lees B.Sc., C.Eng., M.I.C.E., M.C.I.W.E.M.**

Client: **Gladman Developments Limited**
Gladman House
Alexandria Way
Congleton
Cheshire
CW12 1LB

PDF processed with CutePDF evaluation edition www.CutePDF.com

PROJECT QUALITY CONTROL DATA SHEET

Site Name:	North Road, Glossop
Report Title:	Flood Risk Assessment
Report Number:	5598/R1

Revision	Date	Status
-	May 2013	For Approval

Client: Gladman Developments Limited
Gladman House
Alexandria Way
Congleton
Cheshire
CW12 1LB

Client Contact: Sam Gladman

Prepared By: John E Lees B.Sc., C.Eng., M.I.C.E., M.C.I.W.E.M.

CONTENTS

1.0		**INTRODUCTION**	**1**
2.0		**SITE DETAILS**	**2**
	2.1	**Location**	**2**
	2.2	**Surrounding Land Use and Access**	**2**
	2.3	**.The Site**	**2**
	2.4	**Topography**	**3**
	2.5	**Existing Drainage**	**3**
	2.6	**Development Proposals**	**4**
3.0		**FLOOD RISK**	**4**
	3.1	**Environment Agency Flood Map**	**4**
	3.2	**Sequential and Exception Tests**	**5**
	3.3	**Sources of Flood Risk**	**5**
4.0		**SURFACE WATER RUNOFF**	**7**
	4.1	**Requirements for Surface Water Drainage of the Site**	**7**
	4.2	**Site Area**	**7**
	4.3	**Existing Site Run Off**	**7**
	4.4	**Surface Water Run Off from the Developed Site**	**7**
	4.5	**Comment**	**8**
5.0		**FLOOD MITIGATION MEASURES**	**8**
6.0		**CONCLUSIONS**	**10**

APPENDICES

APPENDIX 1 SITE LOCATION PLAN

APPENDIX 2 TOPOGRAPHICAL SURVEY

2A JLP Surveys Ref S12/444

2B Survey extract with drainage notes

APPENDIX 3 UNITED UTILITIES PUBLIC SEWER RECORDS

3A Public Sewer Records

3B Email 5th February 2013

APPENDIX 4 EXISTING SITE RUN OFF RATES

ICP SUDs Mean Annual Flood Method

APPENDIX 5 DRAINAGE STRATEGY FOR FRA PURPOSES

Lees Roxburgh Limited Drg.No.5598-01-01

1.0 INTRODUCTION

1.1 Lees Roxburgh have been instructed by Gladman Developments Ltd to carry out a Flood Risk Assessment (FRA) for proposed residential development of land off North Road, Glossop.

1.2 This report has been prepared to accompany an outline planning application.

1.3 The site lies within an area designated on EA Flood mapping as Flood Risk Zone 1 and therefore comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (< 0.1%).

1.4 *The National Planning Policy Framework (NPPF)* and the accompanying *Technical Guidance to the National Planning Policy Framework* have recently superseded *Planning Policy Statement 25 (PPS25): Development and Flood Risk.*

In accordance with the NPPF at over 1 hectare in area the site is required to be the subject of an FRA.

1.5 In accordance with the NPPF, developers are required to provide an assessment which addresses the following;

- The potential for the proposed development to be affected by flooding either from the development proposal or external sources.
- The potential for the proposed development to increase the flood risk elsewhere.
- That mitigation measures introduced to deal with any risks identified can be successfully managed.
- That the site can be developed and occupied safely.

The NPPF indicates that an assessment of flood risk should be proportionate to the risk and appropriate to the scale, nature and location of the development. This report reflects the requirements of the NPPF in this regard.

2.0 SITE DETAILS

2.1 Location

2.1.1 The site is centred on National Grid references SK 403326, 395257 and is approximately 5.75 hectares in area including proposed POS **(Appendix 1)**.

2.1.2 The site is situated at the northern outskirts of Glossop with Padfield to the north west.

The site fronts onto North Road to the west.

Cemetery Road is located to the north east.

2.2 Surrounding Land Use and Access

2.2.1 The site lies at the northern edge of the settlement boundary with residential development to the south and open farmland to the west, north and east.

Immediately to the east, a depot and a garden centre take access off Cemetery Road and abut/lie close to the boundary of the site.

To the north of the site are playing fields with changing rooms accessed of Cemetery Road.

2.2.2 As noted, the west boundary of the site fronts onto North Road which continues south into Glossop.

Access to the proposed development will be taken from this frontage.

2.2.3 There are a number of reservoirs in the area including two situated close by to the opposite side of North Road to the west.

The most critical however is a third which sits above and abuts the north boundary of the site but lies outside the site ownership; it is understood to be the responsibility of High Peak District Council.

There is provision for anglers within the reservoir which is generally enclosed by trees and bushes.and built up in embankment around its south and south eastern edges.

Various springs and watercourse systems are recorded associated with these reservoirs including two which pass through the site.

2.3 .The Site

2.3.1 The site comprises three fields of open pastureland.

2.3.2 A tree and bush lined ditch forms the boundary between the westernmost and central fields and a post of wire fence between the central field and the eastern field.

The frontage boundary with North Road is formed by a dry stone wall with the remaining boundaries generally formed by post and wire fencing.

2.3.3 Areas of waterlogged ground were noted within all the fields together with evidence of surface water run off within the field adjacent to North Road.

This run off was noted as continuing into and down North Road.

2.4 Topography

2.4.1 Ground levels fall from the highest point of the site at the north east corner in a south westerly direction with the south west corner being the lowest point of the overall site area.

2.4.2 Reference should be made to the topographical survey **(Appendix 2)** but the overall fall across the site is reflected by;

- Level at north east corner… approx 233.5m AOD
- Levels at north west corner at North Road… approx 219m AOD
- Level at south east corner… approx 218m AOD
- Level at south west corner at North Road… approx 208.5m AOD

These levels reflect an overall fall from north east to south west of 1 in 15.

2.4.3 The area of the reservoir has not yet been surveyed but is contained by embankment around its south eastern edge.

2.5 Existing Drainage

2.5.1 The various watercourse systems and reservoirs in the area are recorded on the plan in **Appendix 1.** The site lies within the catchment of Glossop (Shelf) Brook about 1km to the south.

2.5.2 A ditch/watercourse system feeds the reservoir from the north west.

The outlet from the reservoir is close to its entry point and flows into the site at the boundary between the westernmost and central fields.

2.5.3 The ditch system then continues into the site forming the boundary between the westernmost and central fields.

It passes into culvert in the south west corner of the site and was proved by dye testing as reaching the watercourse system some 120m to the south west just to the south of Park Crescent.

Dye testing here also identified some flows overland into North Road.

The drainage arrangements in this area are recorded on the plan in **Appendix 2B.**

2.5.4 There is also a recorded system along the south boundary although not open as implied on OS plans and therefore presumably culverted.

This continues along the south boundary and a 300mm diameter pipe was noted as linking into the system described under 2.5.3 above before draining off site.

2.5.5 A ditch was also noted to the north boundary of the easternmost field above the reservoir although this is very shallow and was dry at the time of the inspection despite recent heavy snowfall.

2.5.6 A pair of manhole covers were noted in the south east corner of the site, possibly evidence of a septic tank although this was not proven.

A manhole was also noted close to the northern boundary of the site just to the north west of the reservoir and providing possible evidence of a drain system from the playing fields into the ditch within the site

2.6 Development Proposals

2.6.1 The development proposals are incorporated in **Appendix 5** and comprise up to approx. 150 No. dwellings.

3.0 FLOOD RISK

3.1 Environment Agency Flood Map

3.1.1 Reference to the Environment Agency Flood Map **(Figure. 1)** indicates that the existing site is situated within a Flood Zone 1 Area of flood risk. This is land defined within the NPPF as land assessed as having a less than 1 in 1000 annual probability of flooding (<0.1% in any year). All uses of land are appropriate in this zone.

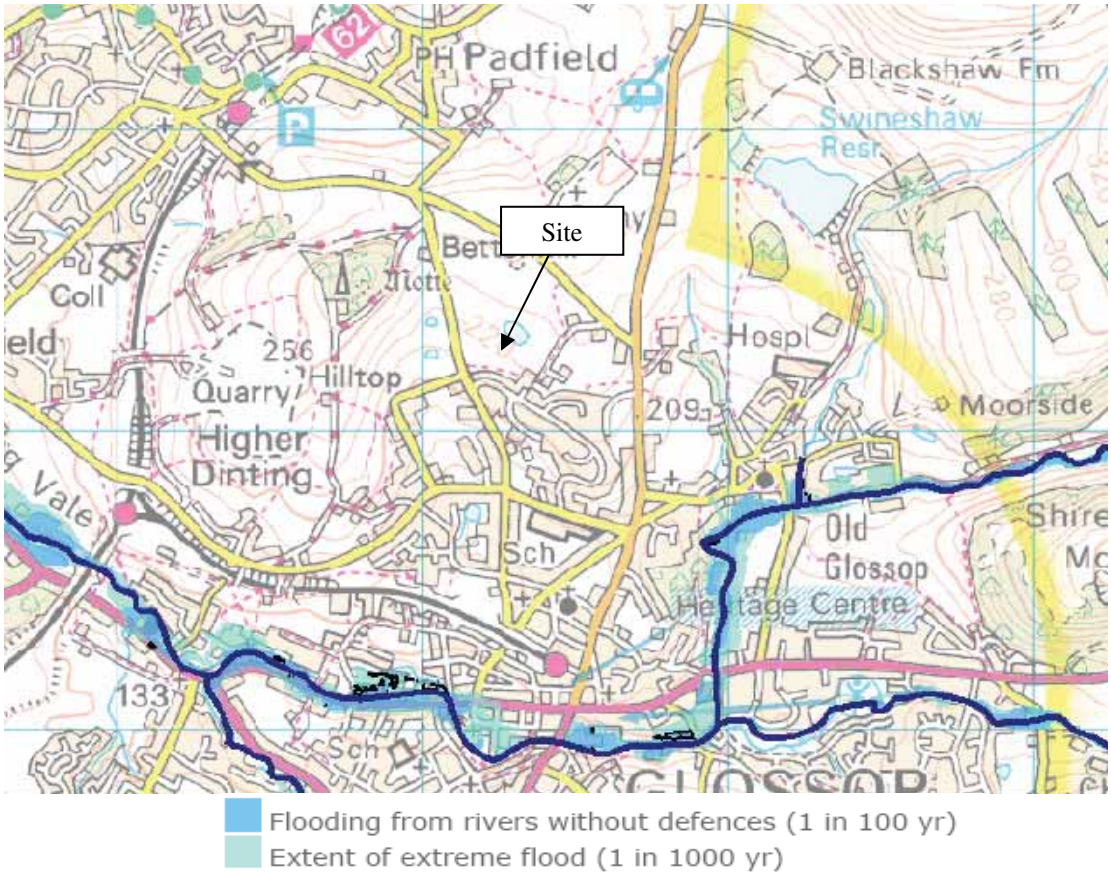


Figure 1: Environment Agency Flood Mapping

3.2 Sequential and Exception Tests

3.2.1 The proposed development is situated within a Flood Zone 1 Risk Area. On this basis, the Sequential and Exception Tests as set out in NPPF are not applicable.

3.3 Sources of Flood Risk

3.3.1 Reservoirs and Watercourse Systems

3.3.1.1 There are two reservoirs situated to the west of North Road.

Ground levels are such that any overtopping or failure associated with these reservoirs would pass overland downhill and away from the site.

A potential flood risk from these reservoirs can therefore be discounted.

3.3.1.2 The main source of flood risk to the development is the reservoir which sits above the northern boundary of the site and therefore clearly needs to be considered within this Flood Risk Assessment. It is understood that the reservoir is owned by, and therefore the responsibility of, High Peak District Council.

The reservoir structure is Category A since a breach would represent a risk to life.

3.3.1.3 The site sits on a hillside and is therefore also at risk of flooding from overland flows associated with the pastureland and the playing fields to the north.

An element of these flows are first directed into the reservoir with an outlet link to the ditch system within the site.

This system then conveys flows through the site and down to the watercourse system to the south west.

Overland flows associated with both the topography to the north of, and within, the site will therefore need to be addressed by this Flood Risk Assessment and will be very much linked with the assessment of the risk associated with the reservoir.

3.3.2 Existing Sewers and Drainage

3.3.2.1 Copies of United Utilities Water public sewer records have been obtained and identify the presence of adopted drainage infrastructure in the area of the site. These records have been incorporated in **Appendix 3.**

3.3.2.2 Reference to the public sewer records indicates the following;

- 300mm diameter surface water system in Heath Road outfalling to the watercourse system which leaves the site immediately to the west of North Road.

- 150mm diameter foul system also serving Heath Road and connecting into what becomes a combined system in North Road and which then falls in a southerly direction.

- 150mm diameter surface water system in North Road falling in a southerly direction.

These systems are situated at levels lower than site. On this basis, any associated flooding will not impact on the site and the development proposals.

3.3.3 Land Drainage and Groundwater

3.3.3.1 Number of areas of waterlogged ground and ponding were noted across the site.

This is consistent with reference to geological mapping that identifies the site by superficial deposits including clays.

3.3.3.2 Development of itself will reduce uncontrolled land drainage run off from the site area with the existing watercourse system to the south west remaining available for residual flows.

On this basis, land drainage and groundwater issues will need to be considered by this FRA but none are anticipated which cannot be dealt with as part of the normal design and construction process.

3.3.4 **Comment**

3.3.4.1 On the basis of the assessment of the potential sources of flood risk described above, it is concluded that the risks associated with the following need to the addressed by this FRA;

- Reservoir
- Land Drainage
- Ditch Systems and Land Drainage

4.0 SURFACE WATER RUNOFF

4.1 Requirements for Surface Water Drainage of the Site

4.1.1 The NPPF recommends that surface water generated by the development site should, as far as is practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development.

4.1.2 Proposals should ensure that volumes and peak flow rates of surface water leaving the developed site are no greater than those prior to development, reducing surface water run off where possible and taking climate change into consideration.

4.2 Site Area

4.2.1 The area proposed for development comprises 5.75 hectares including proposed POS.

4.3 Existing Site Run Off

4.3.1 The existing site is greenfield.

4.3.2 Existing greenfield run off rates have been calculated based on the EA recommended ICP SUDS impact (FSR) method for the developable area, excluding POS, (**Appendix 4**) and these are as follows;

- Q 1 year… 63.4 litres/sec
- Q 30 years… 123.7 litres/sec
- Q 100 years… 151.7 litres/sec

4.4 Surface Water Run Off from the Developed Site

4.4.1 The development plan is incorporated in **Appendix 5.**

4.4.2 Uncontrolled flows from the development will significantly exceed greenfield run off rates. For the purposes of this FRA, it is considered that development run off rates limited to the greenfield run off rates identified in 4.3.2. would be appropriate.

4.5 Comment

4.5.1 A geoenvironmental assessment/desk study has identified that ground conditions are unlikely to favour a ground percolation based drainage solution and this is consistent with the localised waterlogged conditions encountered onsite.

4.5.2 Levels within the proposed development area fall towards the watercourse system at North Road in the south west corner of the site.

On this basis, the proposed outfall point for a gravity surface water drainage from the development is to this watercourse system to the south, hence mimicking the existing greenfield run off.

4.5.3 It is therefore proposed to connect the surface water drainage system into this system, thus capturing and controlling surface water discharge from the development.

The new development surface water system will be put forward for adoption under an S104 Agreement with United Utilities.

5.0 FLOOD MITIGATION MEASURES

5.1 Reservoir

5.1.1 The reservoir is designated Category A and is understood to be owned by, and therefore the responsibility, of High Peak District Council.

As such, High Peak District Council are responsible for ensuring the structural integrity of the reservoir and for ensuring that the reservoir can safely pass forward incoming flows into the downstream watercourse system without overtopping.

5.1.2 For the purposes of this FRA, it is assumed that High Peak District Council will continue to discharge their legal obligations in this regard.

5.1.3 On this basis, the risk with respect to the reservoir is covered under Section 5.2 below.

5.2 Ditch Systems and Land Drainage

5.2.1 The drainage channel from the reservoir which lies outside the application site comprises part of the existing local drainage network.

The application proposal will integrate this existing system providing for its maintenance and management as necessary. At detailed design stage, where required, alterations and upgrades to the drainage system will be carried out in order to ensure no flood risk to the development.

The introduction of culverts will be minimised to areas where vehicular and pedestrian cycle access is proposed.

5.2.2 Development levels will be set to ensure a route of sufficient capacity is provided for ditch and land drainage flows entering the site from the north either overland or via the reservoir.

5.2.3 An overland route through the site will be provided to ensure the flows are safely conveyed through the development.

5.2.4 A land drainage system will be provided to ensure residual flows are similarly conveyed through the development to the outfall point in the south west corner of the site.

5.2.5 These proposals will represent an improvement on the existing situation whereby overland flows whilst directed locally to the ditch/watercourse system are otherwise uncontrolled and could present a risk to adjacent property.

5.3 Drainage Development Proposals

5.3.1 It is proposed that flows from the development will be connected into the existing watercourse system at the south west corner of the site with flows limited to greenfield values.

The on site piped system will be designed to accommodate flows up to the 1 in 30 year event and will be proposed for adoption by United Utilities under a Section 104 Agreement.

Overall flows up to the 1 in 100 year event plus climate change allowance will be accommodated onsite within the adopted drainage system supplemented by above ground storage contained within the proposed development levels, all subject to design development.

5.3.2 It is anticipated some raising of site levels will be required within the low area of the site to achieve a gravity drainage solution.

More generally, development levels will also be set in accordance with good design practice and will therefore further mitigate against any risk of associated flooding of properties.

5.3.3 The drainage strategy is incorporated in **Appendix 5.**

6.0 CONCLUSIONS

6.1 The FRA has identified that the site lies in an area of Zone 1 Flood Risk.

6.2 A reservoir is situated at the northern boundary and is above the level of much of the site area.

This reservoir is Category A and the responsibility of High Peak District Council with respect to its structural integrity and its ability to safely accommodate incoming flows without overtopping.

This FRA assumes High Peak District Council are meeting their obligations in this regard.

On this basis, the existing ditch/watercourse system which accommodates flows from the reservoir will be maintained with development levels set to ensure flows through the site are safely conveyed to the outfall in the south west corner without presenting a risk to property.

A land drainage system will be implemented to pick up residual land drainage flows similarly directing them to the south west outfall.

6.3 It is proposed to connect surface water drainage into the existing surface water system at the south west corner of the site with flows limited to greenfield run off rates, thus mimicking existing run off in accordance with the NPPF.

6.4 The proposed drainage system will be designed to accommodate a 1 in 30 year event. The system will be put forward for adoption by United Utilities under a Section 104 Agreement and United Utilities will therefore become responsible for the long term maintenance of the new piped drainage system

Overall, design of the drainage and the setting of site levels will accommodate flows generated by up to the 1 in 100 year event plus allowance for climate change.

Private drainage (i.e. not adoptable) serving houses within the development will be designed to current building standards.

Localised raising of levels within the low area of the site is proposed.

6.5 It is therefore concluded that this FRA has demonstrated in accordance with the NPPF that the development is not at risk of flooding from external sources, will not increase flood risk associated with the development and its environment and is therefore appropriate.

APPENDIX 1

SITE LOCATION PLAN

This drawing is the property of FPCR Environment and Design Ltd and is issued on the condition it is not reproduced, retained or disclosed to any unauthorised person, either wholly or in part without written consent of FPCR Environment and Design Ltd.

Ordnance Survey material is used with the permission of The Controller of HMSO, Crown copyright 100018896.

Application Boundary (5.75 Ha)

Sports Pitches
Reservoir
Reservoir
Reservoir
Depot
Nursery
North Road
Cemetery Road
Park Crescent
Howard Park
Heath Road
Bexley Close
Bowden Road
Haywards Close
Fernhill Close
Kingsmoor Fields
0m
100m
200m
N

J:\5376/InDesign/5376-L-01to03

Gladman Developments Ltd
North Road
Glossop

APPLICATION BOUNDARY

Scale 1:1250 @ A1 / 1:2500 @ A3
May 2013
5376-L-01 rev. A

masterplanning
environmental assessment
landscape design
urban design
ecology
architecture
arboriculture

FPCR Environment and Design Ltd
Lockington Hall
Lockington
Derby DE74 2RH

t: 01509 672772
f: 01509 674565
e: mail@fpcr.co.uk
w: www.fpcr.co.uk

APPENDIX 2

TOPOGRAPHICAL SURVEY

APPENDIX 2A

JLP Surveys Ref S12/444



N

SURVEY ORIENTATED TO REAL TIME GPS

STN	EASTING	NORTHING	LVL
STN1	403119.057	395273.790	213.147
STN1A	403103.894	395360.433	218.954
STN1B	403136.472	395172.299	206.151
STN2	403179.746	395281.101	216.682
STN2A	403253.965	395360.820	224.414
STN3	403300.812	395246.304	223.224
STN4	403391.237	395281.106	226.972

LEGEND

AV	AIR VALVE	MK	SERVICE MARKER POST
BL	BOLLARD	MP	MONITOR POINT
BL	BED LEVEL	NP	NAME PLATE
BS	BUS STOP	PS	POST
BT	BT INSPECTION COVER	PYL	ELECTRICITY PYLON
CL	COVER LEVEL	RE	RODDING EYE
CP	CATCH PIT	RL	RAILWAY LINE
EP	ELECTRICITY POLE	RS	ROAD SIGN
EB	ELECTRIC CONTROL BOX	RH	RIDGE HEIGHT
FL	FLOOR LEVEL	ST	STOP TAP
FH	FIRE HYDRANT	SFL	SOFFIT LEVEL
G	GULLY	SP	SIGN POST
GH	GREENHOUSE	SV	STOP VALVE
GP	GATE POST	TCB	TELEPHONE CALL BOX
GV	GAS VALVE	TS	TRAFFIC SIGNALS
IC	INSPECTION CHAMBER	TP	TELEGRAPH POLE
IL	INVERT LEVEL	WL	WATER LEVEL
LP	LAMP POST	WM	WATER METER
MH	MANHOLE		

SURVEY STATION

TREE

C/L.F	CHAIN LINK FENCE
CP&P.F	CONCRETE POST&PANEL FENCE
CP&TP.F	CONCRETE POST/TIMBER PANEL FENCE
P&W.F	POST & WIRE FENCE
SEC.F	PALLISADE/SECURITY FENCE
T.F	TIMBER FENCE
BW.F	BARB WIRE FENCE
RS.F	RANCH STYLE FENCE
KR.F	KNEE RAIL FENCE
B.WALL	BRICK WALL
C.WALL	CONCRETE WALL
R.WALL	RETAINING WALL
S.WALL	STONE WALL

NOTES:

ONLY MANHOLES AND SERVICES VISIBLE AT TIME OF SURVEY SHOWN

DRAINAGE INFORMATION MUST BE CHECKED AND VERIFIED WITH LOCAL AUTHORITY RECORDS PRIOR TO WORK COMMENCING

TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE AVERAGE SPREAD, THE DRIP LINE LAYER DENOTES THE TREES EXTREMITY

BENCH MARK INFORMATION

All levels relate to OSBM NEWLYN
DATUM GENERATED BY VRS GPS

project

NORTH ROAD, GLOSSOP

title

TOPOGRAPHICAL LAND SURVEY

scale	date	drawn	drawing number	revision
1:500	OCT 2012	PSH	S12/444	

JLP Surveys Limited

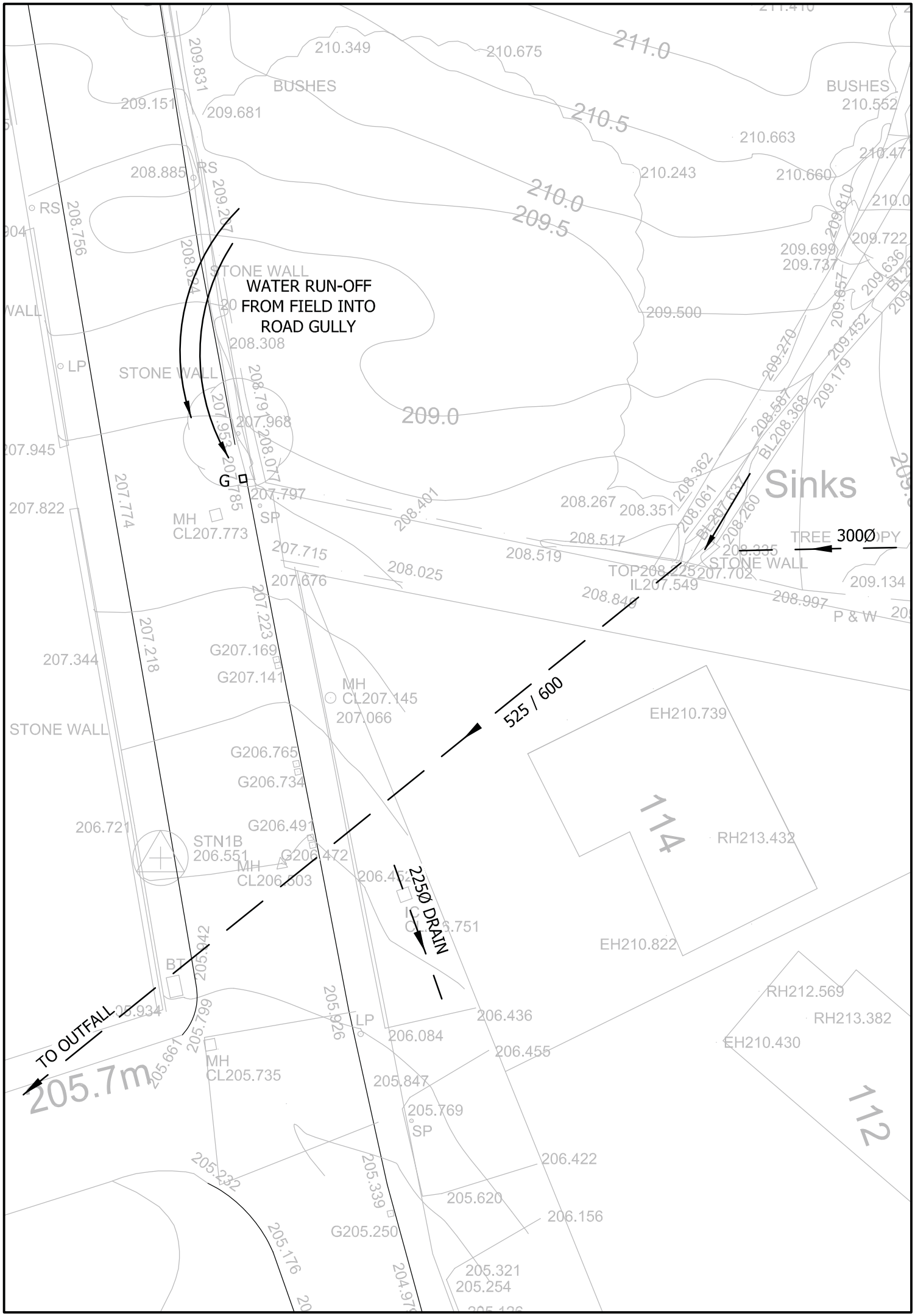
SUITE 23, RODNEY HOUSE
KING STREET,
WIGAN WN1 1BT

Contact Peter Houston

Tel (01942 243313)
Fax (01942 492230)
Mobile (07710 428498)
Email jlpsurveys@yahoo.com

APPENDIX 2B

Survey extract with drainage notes


WATER RUN-OFF
FROM FIELD INTO
ROAD GULLY
525 / 600
225Ø DRAIN
TO OUTFALL
300Ø
Sinks
114
112
205.7m
209.0
209.5
210.0
210.5
211.0
BUSHES
STONE WALL
MH
CL207.773
MH
CL207.145
MH
CL206.503
MH
CL205.735
STN1B
206.551
G207.169
G207.141
G206.765
G206.734
G206.491
G206.472
G205.250
TOP208.225
IL207.549
TREE
P & W
EH210.739
EH210.822
RH213.432
RH212.569
RH213.382
EH210.430
RS
LP
SP
BT

APPENDIX 3

UNITED UTILITIES PUBLIC SEWER RECORDS

APPENDIX 3A

Public Sewer Records

United Utilites Water PLC
Property Searches
Ground Floor Grasmere House
Lingley Mere Business Park
Great Sankey
Warrington
WA5 3LP
DX 715568 Warrington
Telephone 0870 751 0101
Fax Number 0870 7510102
Property.searches@uuplc.co.uk

Lees Roxburgh Limited
The Genesis Centre
Science Park South
Birchwood
Warrington
WA3 7BH

Your Ref: 5598/5.1
Our Ref: 12/ 916276
Date: 22/01/2013

FAO: K BLAYDON

Dear Sirs

Location: LAND AT NORTH ROAD GLOSSOP SK13 7AY

I acknowledge with thanks your request dated 22/01/12 for information on the location of our services.

Please find enclosed plans showing the approximate position of our apparatus known to be in the vicinity of this site.
I attach General Condition Information sheets, which details contact numbers for additional services (i.e. new supplies, connections, diversions) which we are unable to deal with at this office. In addition you should ensure they are made available to anyone carrying out any works which may affect our apparatus.

I trust the above meets with you requirements and look forward to hearing from you should you need anything further.

If you have any queries regarding this matter please telephone us on 0870 7510101.

Yours Faithfully,

S McManus.

Sue McManus
Operations Manager
Property Searches

United Utilities Water PLC
Registered in England & Wales No. 2366678
Registered Office: Haweswater House,
Lingley Mere Business Park, Lingley Green Avenue,
Great Sankey, Warrington, WA5 3LP

TERMS AND CONDITIONS - WASTERWATER & WATER DISTRIBUTION PLANS

These provisions apply to the public sewerage, water distribution and telemetry systems (including sewers which are the subject of an agreement under Section 104 of the Water Industry Act 1991 and mains installed in accordance with the agreement for the self construction of water mains) (UUW apparatus) of United Utilities Water PLC ("UUW").

TERMS AND CONDITIONS:

1. This Map and any information supplied with it is issued subject to the provisions contained below, to the exclusion of all others and no party relies upon any representation, warranty, collateral contract or other assurance of any person (whether party to this agreement or not) that is not set out in this agreement or the documents referred to in it.

2. This Map and any information supplied with it is provided for general guidance only and no representation, undertaking or warranty as to its accuracy, completeness or being up to date is given or implied.

3. In particular, the position and depth of any UUW apparatus shown on the Map are approximate only. UUW strongly recommends that a comprehensive survey is undertaken in addition to reviewing this Map to determine and ensure the precise location of any UUW apparatus. The exact location, positions and depths should be obtained by excavation trial holes.

4. The location and position of private drains, private sewers and service pipes to properties are not normally shown on this Map but their presence must be anticipated and accounted for and you are strongly advised to carry out your own further enquiries and investigations in order to locate the same.

5. The position and depth of UUW apparatus is subject to change and therefore this Map is issued subject to any removal or change in location of the same. The onus is entirely upon you to confirm whether any changes to the Map have been made subsequent to issue and prior to any works being carried out.

6. This Map and any information shown on it or provided with it must not be relied upon in the event of any development, construction or other works (including but not limited to any excavations) in the vicinity of UUW apparatus or for the purpose of determining the suitability of a point of connection to the sewerage or other distribution systems.

7. No person or legal entity, including any company shall be relieved from any liability howsoever and whensoever arising for any damage caused to UUW apparatus by reason of the actual position and/or depths of UUW apparatus being different from those shown on the Map and any information supplied with it.

8. If any provision contained herein is or becomes legally invalid or unenforceable, it will be taken to be severed from the remaining provisions which shall be unaffected and continue in full force and affect.

9. This agreement shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts, save that nothing will prevent UUW from bringing proceedings in any other competent jurisdiction, whether concurrently or otherwise.

Copyright © United Utilities Water PLC 2011-08-02

Conditions and information regarding wastewater network

These general conditions and precautions apply to the wastewater network of United Utilities.

Please ensure that a copy of these conditions is passed to your representative and contractor on site.

1. United Utilities provides the approximate locations of its sewers according to its records. These records are not necessarily accurate or complete nor do they normally show the positions of every sewer culvert or drain, private connections from properties to the public sewers or the particulars of any private system. No person or company shall be relieved from liability for any damage caused by reason of the actual positions and/or depths being different from those indicated. The records do indicate the position of the nearest known public sewer from which the likely length of private connections can be estimated together with the need for any off site drainage rights or easements.

2. Special requirements relative to our sewers may be indicated. United Utilities employees or its contractors will visit any site at reasonable notice to assist in the location of its underground sewers and advise any precautions that may be required to obviate any damage. To arrange a visit or for further information regarding new supplies, connections, diversions, costing, or any notification required under these General Conditions, please call us on **0845 746 2200**.

3. Where public sewers are within a site which is to be developed and do not take any drainage from outside the area, they are from an operational viewpoint redundant. The developer must identify all redundant sewers affected by the development and apply to United Utilities in writing for these sewers to be formally closed. The developer shall bear all related costs of the physical abandonment work.

4. Public sewers within the site that are still live outside the area, will be subject to a “Restricted Building zone”. This would normally be a surface area equivalent to the depth of the sewer measured from the centre line of the sewer on either side. No construction will be permitted within that zone. The developer should also note that deep and wide rooted trees must not be planted in close proximity to live sewers. Access to public sewers must be maintained at all times and no interference to manholes will be permitted during construction work.

5. Where there is a public sewer along the line of a proposed development/building, arrangements shall be made by the developer at his cost to divert the sewer around the development. Where this is not possible and as a last resort, a “Building Over Agreement” will need to be completed under section 18 of the Building Act 1984. The developer shall design building foundations to ensure that no additional loading is transferred to the sewer and submit such details both to the Local Authority’s Building Control Officer and to United Utilities for approval/acceptance. United Utilities on a rechargeable basis would normally undertake all aspects of design work associated with the diversion of any part of the operational wastewater network.

6. Where there is a non-main river watercourse/culvert passing through the site, the landowner has the responsibility of a riparian owner for the watercourse/culvert and is responsible for the maintenance of the fabric of the culvert and for all works involved in maintaining the unrestricted flow through it. Building over the watercourse/culvert is not recommended. The developer must contact the local authority before any works are carried out on the watercourse/culvert. Where it is necessary to discharge surface water from the site into the watercourse/culvert the developer shall make an assessment of the available capacity of the watercourse/culvert (based on a 1 in 50 year event) and ensure that the additional flow to be discharged into the watercourse/culvert will not cause any flooding. In appropriate cases, flooding may be prevented by on-site storage. The developer shall submit the relevant details required to substantiate his development proposals. Details of any outfall proposed shall also be submitted to the Environment Agency, PO Box 12, Richard Fairclough House, Knutsford Road, Warrington, Cheshire, WA4 1HT for their approval.

7. Where there is a main river watercourse/culvert passing through the site, the developer shall submit all proposals affecting the river to the Environment Agency at the address stated in paragraph 6 for approval/acceptance.

8. Your attention is drawn also to the following:

- **Private drains or sewers which may be within the site.** United Utilities has no duty to keep records of private drains and sewers, and there are no comprehensive records kept elsewhere. Local Authority Building Control Officers may have records of recent developments and they or the developer may be able to provide information in this respect.

- **Applications to make connections to the public sewer.** The developer must write to United Utilities requesting an application form that must be duly completed and returned. No works on the public sewer shall be carried out until a letter of consent is received from United Utilities.

- **Sewers for adoption.** If an agreement for the adoption of sewers under Section 104 of the Water Industry Act 1991 is being contemplated, a submission in accordance with "Sewers for Adoption", Fifth Edition, published by the Water Research Centre (2001) Plc, Henley Road, Medmenham, PO Box 16, Marlow, Buckinghamshire, SL7 2HD will be required, taking into consideration any departures from the general guide stipulated by United Utilities.

- **Further consultation with United Utilities.** Developers wishing to seek advice or clarification regarding sewer record information provided should contact United Utilities to arrange an appointment. A consultation fee may be charged, details of which will be made available at the time of making an appointment.

9. Combined sewers, foul sewers, surface water sewers, and pumped mains. These are shown separately in a range of colours or markings to distinguish them on our drawings, which are extracts from the statutory regional sewer map. A legend and key is provided on each extract for general use, although not all types of sewer will be shown on every extract.

Combined sewers shown coloured red carry both surface water and foul sewage, especially in areas where there is no separate surface water sewerage system.

Foul sewers coloured brown may also carry surface water and there may be no separate surface water system indicated in the immediate area. Both combined and foul sewers carry wastewater to our treatment works before it can safely be returned to the environment.

Surface water sewers coloured blue on our drawings are intended only to carry uncontaminated surface water (e.g. rainfall from roofs, etc) and they usually discharge into local watercourses. It is important for the protection of the environment and water quality that only uncontaminated surface water is connected to the surface water sewers. Improper connections to surface water sewers from sink wastes, washing machines and other domestic use of water can cause significant pollution of watercourses.

Pumped mains, rising mains and sludge mains will all be subject to pumping pressures and are neither suitable nor available for making new connections.

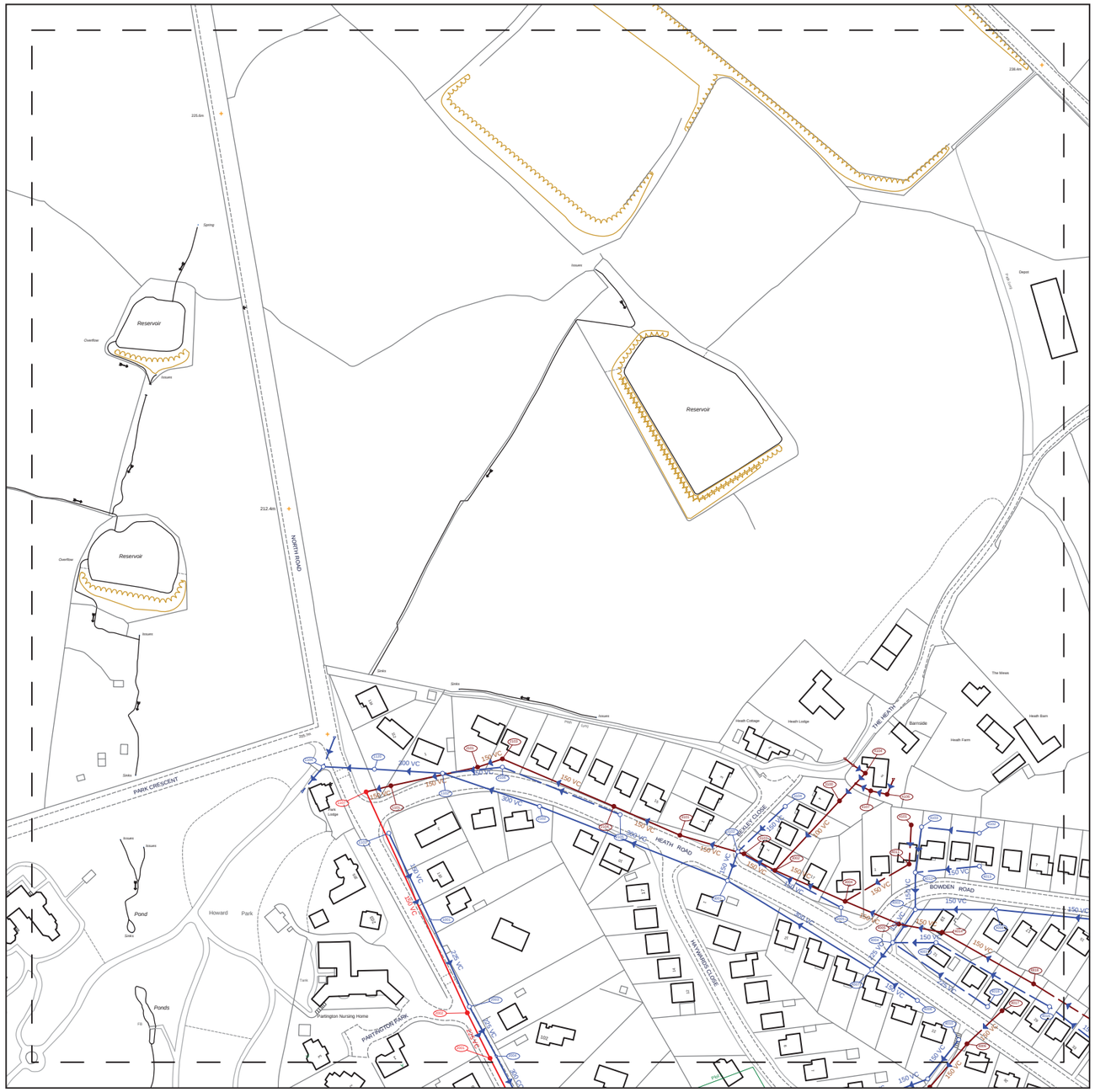
Highway drains, when included, show as blue and black dashed lines. Highway drains are not assets belonging to United Utilities and are the responsibility of local authorities.

10. For information regarding future proposals for construction of company apparatus please write to United Utilities, PO Box 453, Warrington, WA5 3QN.

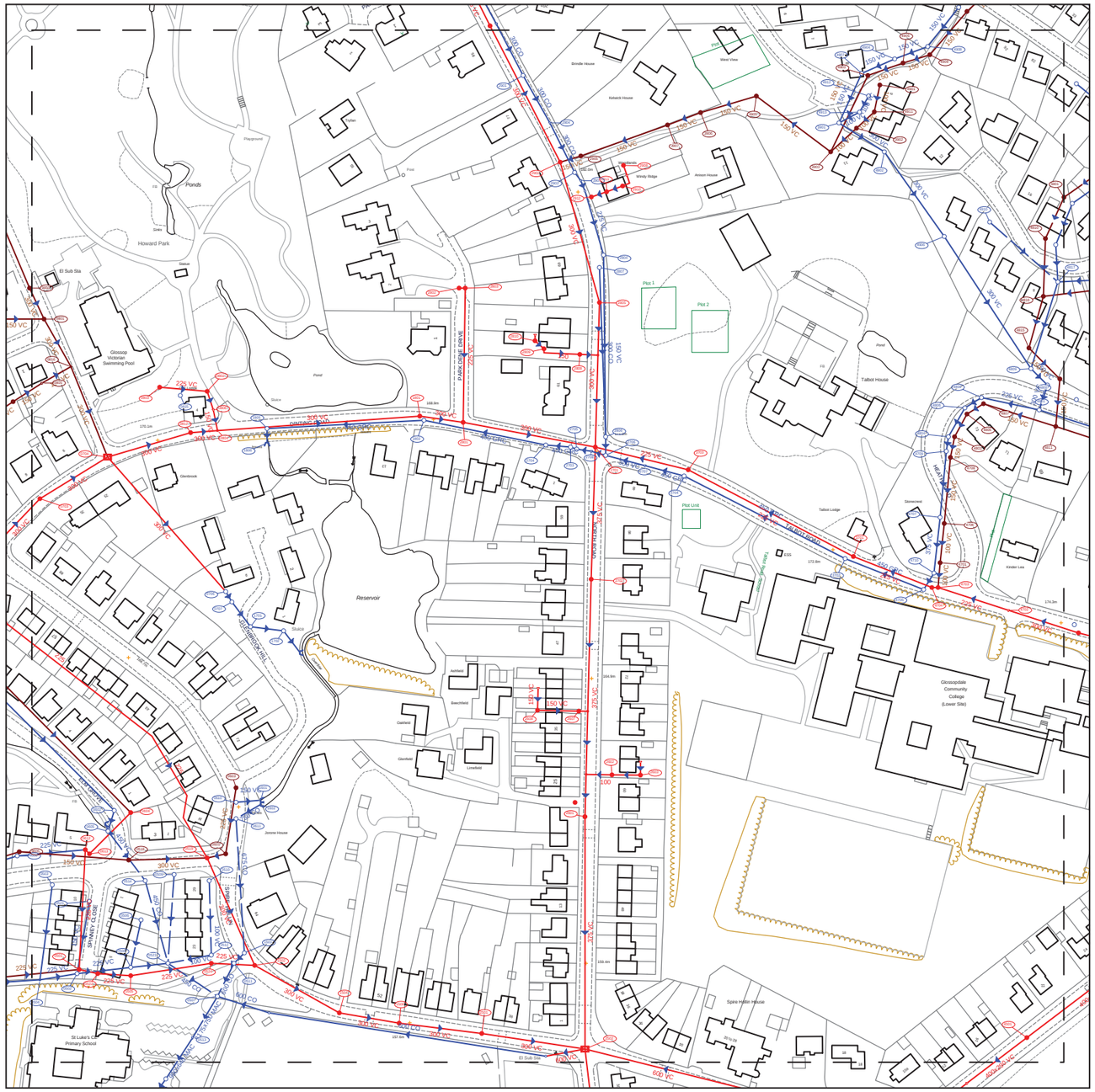
11. For information regarding easements, deeds, grants or wayleaves please write to United Utilities Property Solutions, Coniston Buildings, Lingley Mere Business Park, Lingley Green Avenue, Great Sankey, Warrington WA5 3UU (**Tel: 01925 463 654**).

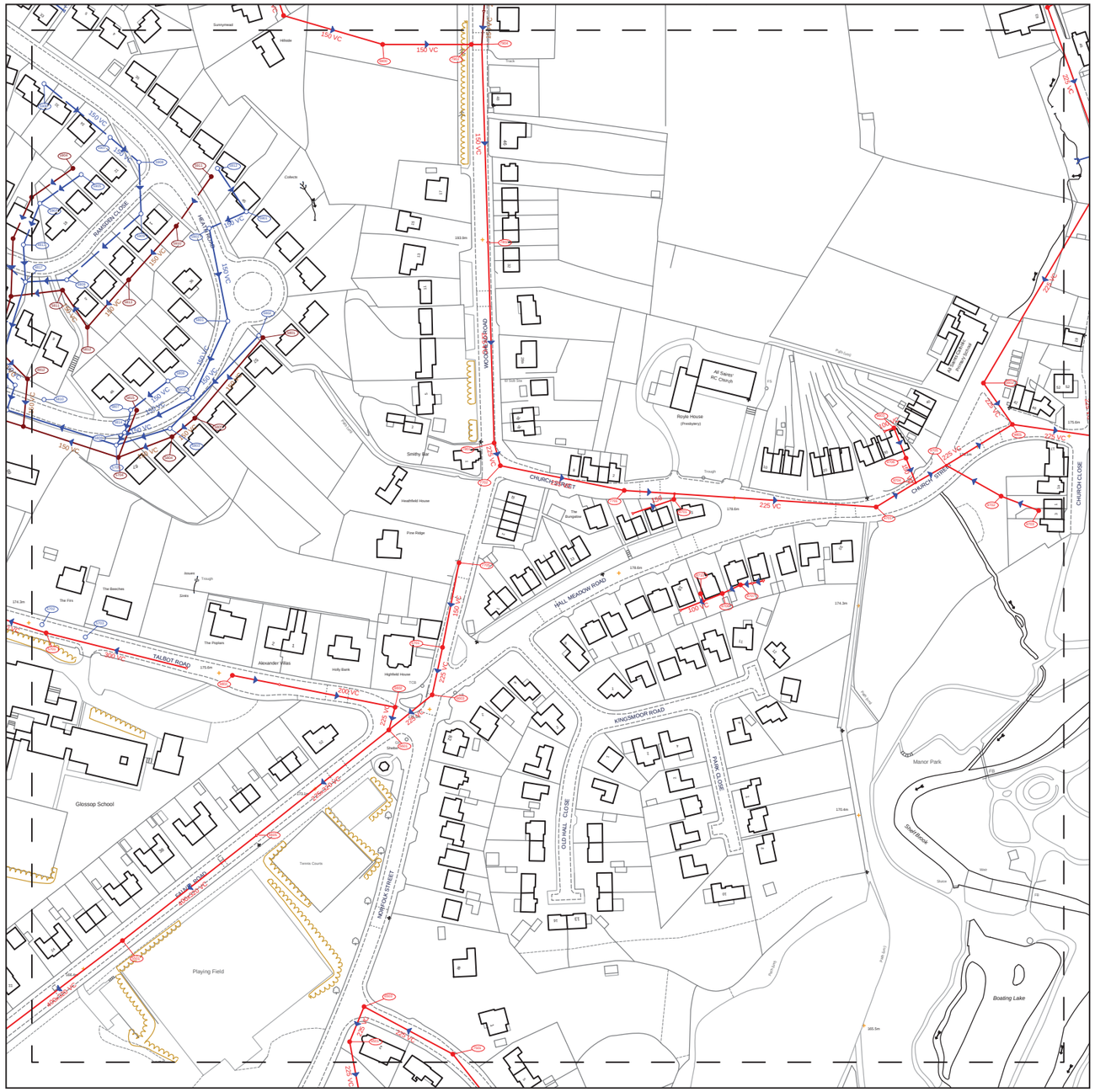
United Utilities Water PLC
Haweswater House, Lingley Mere Business Park,
Lingley Green Avenue, Great Sankey, Warrington WA5 3LP
www.unitedutilities.com

Registered in England and Wales Registered Number 2366678


Reservoir
Reservoir
Reservoir
Spring
Overflow
Overflow
Issues
Issues
Issues
225.4m
212.4m
238.4m
NORTH ROAD
Depot
Pylons
Sinks
Sinks
Sinks
Issues
Issues
Issues


CRAIGTERY ROAD
WOODHEAD ROAD
Lanesside Farm
Lanesside Cottage
Hillside Cottage
Dawson House
Windhaven
Wimberry Hill Farm
Nursery
Trough
Spring
Stone
Issues
Beeley Moor
Chatsworth
Beeley House
Greenways
Cleadon
Sunnymead
Whistle
Windybridge
Gangard
Path (faint)
Path (um)
Track (um)
Sinks
Barn
Tank
228.9m
221.6m
213.6m
SERPHILL CLOSE
150 VC
225 VC
150 VC
150 VC
150


Ponds
Howard Park
Playground
Toilets
El Sub Sta
Glossop Victorian Swimming Pool
Pond
Sluice
Reservoir
Overflow Weir
Sluice
Glossop Cemetery
Glossop Cemetery
Bridle House
Kirkwick House
Wood View
Wendy Ridge
Anson House
Talbot House
Talbot Lodge
Pond
Plot 1
Plot 2
Plot Unit
Stonecrest
Kinder Lea
Spire Holm House
Glossopdale Community College (Lower Site)
Jerome House
Ashfield
Beechfield
Oakfield
Glenfield
Limefield
Glossop Cemetery
St Luke's C of E Primary School
PARK DALE DRIVE
HEATH ROAD
HEATH ROAD
HEATH ROAD



OS Sheet No: SK0394NE

Scale 1:1250 Date: 22-Jan-2013

Printed by: Jodie Lloyd

Refno	Cover	Func	Type	Invert	Size.x	Size.y	Shape	Matl	Grad	Length
5501	167.66	C	M	165.91	400	320	E	VC	29	77.8
5601		C	G		300		C	VC		70.09
5602		C	M		200			VC		23.21
5701	174.42	C	M	171.83	300		C	VC		35.74
5702	174.48	S	M							
5703	174.8	S	M							
5704	194.78	F	M	192	150		C	VC		48.38
5705		S	M		225			VC		55.66
5801	203.59	S	M	202.36	150		C	VC	12	40.72
5802	200.86	S	M		150		C	VC		37.12
5803	199.52	S	M	197.1	150		C	VC		27.2
5804	199.47	F	M	196.76	150		C	VC	9	27.86
5805	200.84	F	M	198.77	150		C	VC	22	14.21
5806	197.01	S	M	194.84	225		C	VC		7.21
5807	198.49	S	M	195.44	150		C	VC	-7	5.1
5808	201.73	S	M	200.16	150		C	VC	9	22.8
5809		S	M		150			VC		20.02
5810	192.92	S	M							
5811		F	M		150			VC		25.18
5812		F	M		150		C	VC		21.63
5813	204.85	F	M	203.09	150		C	VC		30.48
5814		S	Q	196.18	100		C	VC		6.32
5815		F	M		150			VC		24.48
5901		F	M		150			VC		21.93
5902	206.08	S	M	204.46	150		C	VC	22	45.89
5903	205	S	M		150			VC		21.54
5904		F	M		150			VC		24.41
5905		S	M		150			VC		24.41
5906	211.02	S	M	209.42	150		C	VC	25	41.23
5907	209.59	S	M	207.78	150		C	VC		18.44
5908		S	M		150			VC		25.02
5909		S	M		150			VC		48.17
5910		F	M		150		C	VC		34.71
5911		F	M		150			VC		29.41
5912		S	M		150			VC		25.24
6501	170.03	C	M	168.23	225		C	VC	-29	32.56
6503	172.48	C	M	170.84	225		C	VC	7	18.38
6601	175.32	C	M	173.69	225	320	U	VC	21	81.84
6602	176.09	C	M	173.84	225		C	VC	-34	11.4
6603	176.82	C	M	174.74	225		C	VC	34	27.02
6604		C	G		200		C	VC		57.07
6605		C	Q	169.71	400	320	E	VC	22	82.62
6701	178.25	C	M	175.33	225		C	VC	40	23.54
6801	203.56	F	M	201.39	150		C	VC	28	51.09
6802	203.54	S	M	201.73	150		C	VC	18	62.24
6900	207.76	C	M	206.12	150		C	VC	6	43
6901		S	M		150		C	VC		19.7
7501	175.7	C	M	173.83	225		C	VC	16	48.76
7701	182.29	C	M	180.04	225		C	VC		24.42
7702	186.98	C	M	185.09	225		C	VC	12	61.19
7705	181.56	C	M	179.78	150		C	VC	14	41.77
7801	187.7	C	M	185.56	225		C	VC	24	11.4
7802		C	Q		225		C	VC		97.05
7902	200.3	C	M	199.11	150		C	VC		5
7904		C	J		150		C	VC		96.05
8701		C	M		150					2.77
8703		C	Q		150					20.96
8704		C	J		225		C	VC		97.84
8705		C	Q		100		C	VC		5.54
8706		C	Q		100		C	VC		5.71
8707		C	M		100		C	VC		9.77
8708		C	Q							
8709		C	M		100		C	VC		21.74
8710		C	M		100		C	VC		4.06
8711		C	J							
9701	173.47	C	M	171.71	225		C	VC		22.48
9702		C	M		225			VC		30.56
9703		C	M		225			VC		19.46
9704		C	J		225		C	VC		16.99
9705		C	J		225		C	VC		37.71
9706		C	M		150		C	VC		12.8
9801	173.91	C	M	170.79	225		C	VC	109	42.43
9802	173.15	C	M	171.32	225		C	VC	61	24.41
9803		C	M		150		C	VC		15.75
9804		C	Q		100		C	VC		4.74

WASTE WATER SYMBOLOGY

MANHOLE

FOUL SURFACE COMBINED DUAL — SIDE ENTRY MANHOLE

FOUL SURFACE COMBINED

PUBLIC MAIN
PRIVATE MAIN
SECTION 104
PUMPING MAIN
HIGHWAY DRAIN
SLUDGE MAIN
ABANDONED

SITE TERMINATION
AIRVALVE
CASCADE
CONTROL KIOSK
CONTROL VALVE
EXTENT OF SURVEY
FLOW METER
GULLEY
HATCHBOX
HEAD OF SYSTEM
HEADWALL
HYDROBRAKE
INLET
INSPECTION CHAMBER
T-JUNCTION (SADDLE)
LAMP HOLE
OIL INTERCEPTOR
PENSTOCK
PUMP
RODDING EYE
SEA OUTFALL
SOAKAWAY
SUMMIT NODE
TUMBLING BAY
UNSPECIFIED
VALVE
VALVE CHAMBER
WASHOUT

GHOST NODE (inc. GN - Rising Main & GN - Dual Function)
EXPEDIENCY NODE (CHANGE OF CHARACTERISTIC)

BIFURCATION
CATCHPIT
CHAMBER
CONTAMINATED SURFACE WATER
DROPSHAFT
FLOW CONTROL
SCREEN CHAMBER POWERED
SCREEN CHAMBER STATIC
PUMPING STATION
EJECTOR STATION
SLUDGE PUMPING STATION
SHEET EDGE
SEWER OVERFLOW
WASTE WATER TREATMENT WORKS
SEPTIC TANK
TANK
VENT COLUMN
DISCHARGE POINT (OUTFALL)

Note - ALL flow direction arrows are BLUE - colour not significant

NODE TABLE ABBREVIATIONS

MANHOLE FUNCTION

F Foul
S Surface
C Combined
T Transition
O Overflow
U Unspecified

MANHOLE / NODE TYPE

M Manhole
J Junction
L Lamphole
H Hatchbox
R Rodding Eye
F Outfall
V Combined Sewer Overflow
P Pumping Station
S Soakaway
D Dual Function Manhole
W Treatment Works
Z Ghost in Rising Main
C Cascade
Y Gulley
E Ejector
O Oil Injector
I Inlet
B Hydrobrake
T Vent Column
X Valve
U Unspecified
Q Expediency Node
G Ghost (to allow pipe bends)

SEWER SHAPE

C Circular
E Egg
O Oval
F Flat Top
R Rectangular
S Square
T Trapezoidal
A Arch
B Barrel
H Horseshoe
U Unspecified

SEWER MATERIAL

AC Asbestos Cement
BR Brick
CI Cast Iron
SI Spun (Grey) Iron
CO Concrete
CS Concrete Segments (Bolted)
CS Concrete Segments (Unbolted)
CC Concrete Box Culvert
DI Ductile Iron
GR Glass Reinforced Concrete
GR Glass Reinforced Plastic
PS Plastic / Steel Composite
PV Polyvinyl Chloride
PE Polyethylene
RP Reinforced Plastic Matrix
ST Steel
VC Vitrified Clay (All Clayware)
PP Polypropylene
PF Pitch Fibre
MA Masonry - In Regular Courses
MA Masonry - Randomly Coursed
U Unspecified

This plan is based upon the Ordnance Survey map with the sanction of the Controller of H.M.Stationary Office. Unauthorised reproduction infringes copyright. Crown Copyright preserved.

OS Sheet No: SK0394NE
Scale 1:1250 Date: 22-Jan-2013
75 Nodes
Sheet 1 of 1

United Utilities
SEWER RECORDS

APPENDIX 3B

Email 5th February 2013

RE: North Road, Glossop 5598/5.1

Planning Liaison [Planning.Liaison@uuplc.co.uk]

Sent: 05 February 2013 15:00

To: Lees Roxburgh

John,

The foul can be discharged to a point that is convenient to yourself but I guess manhole 1107 looks the closes to your site.

Regards

Neil



From: Lees Roxburgh [mailto:office@leesroxburgh.co.uk]
Sent: 28 January 2013 16:40
To: Planning Liaison
Subject: North Road, Glossop 5598/5.1

We are appraising the land shown on the attached plan for residential development of up to 130 No. houses.

It is proposed that surface water be connected to a watercourse system

Would you please confirm your preferred point of connection for foul drainage (approx. 6 litres/sec)

Regards,

John Lees

LEES ROXBURGH Ltd, The Genesis Centre, Science Park South, Birchwood, Warrington, WA3 7BH
Tel: 01925 812 898, Fax: 01925 838 864, Email: office@leesroxburgh.co.uk, Web Site: www.leesroxburgh.co.uk

This communication contains information which is confidential and may also be privileged. It is for the exclusive use of the addressee. If you are not the addressee please note that any unauthorised distribution, copying or use of this communication or the information in it is prohibited. If you have received this communication in error please telephone us immediately.

==========

The information contained in this e-mail is intended only
for the individual to whom it is addressed. It may contain
legally privileged or confidential information or otherwise
be exempt from disclosure. If you have received this Message
in error or there are any problems, please notify the sender
immediately and delete the message from your computer. You
must not use, disclose, copy or alter this message for any
unauthorised purpose. Neither United Utilities Group PLC nor
any of its subsidiaries will be liable for any direct, special,
indirect or consequential damages as a result of any virus being
passed on, or arising from the alteration of the contents of
this message by a third party.

United Utilities Group PLC, Haweswater House, Lingley Mere
Business Park, Lingley Green Avenue, Great Sankey,
Warrington, WA5 3LP
Registered in England and Wales. Registered No 6559020

www.unitedutilities.com
www.unitedutilities.com/subsidiaries
==========

APPENDIX 4

EXISTING SITE RUN OFF RATES
ICP SUDs Mean Annual Flood Method

ICP SUDS Mean Annual Flood

Input

Return Period (years)	1	Soil	0.500
Area (ha)	5.870	Urban	0.000
SAAR (mm)	1400	Region Number	Region 10

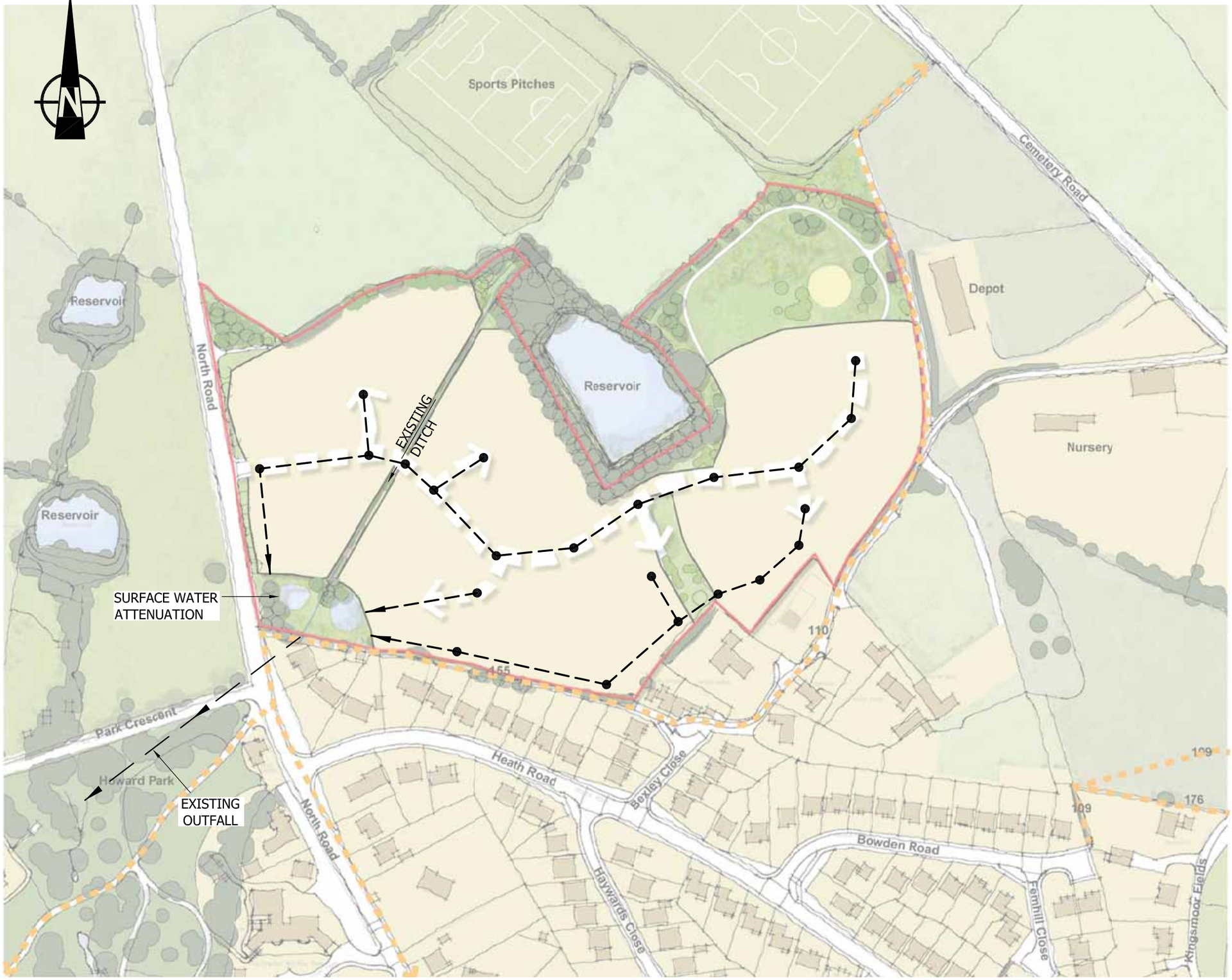
Results	l/s
QBAR Rural	72.9
QBAR Urban	72.9
Q1 year	63.4
Q1 year	63.4
Q30 years	123.7
Q100 years	151.7

©1982-2010 Micro Drainage Ltd

APPENDIX 5

DRAINAGE STRATEGY FOR FRA PURPOSES
Lees Roxburgh Limited Drg.No.5598-01-01

IF IN DOUBT – ASK



DRAWING FILE LOCATION-

Notes

KEY:-

SURFACE WATER SYSTEM

Rev	REVISION	By	Date

GLADMAN DEVELOPMENTS

NORTH ROAD
GLOSSOP

DRAINAGE STRATEGY FOR FRA PURPOSES

LEES ROXBURGH
Consulting Engineers

THE GENESIS CENTRE, SCIENCE PARK SOUTH, BIRCHWOOD, WARRINGTON, CHESHIRE, WA3 7BH.
Tel: 01925 812898 Fax: 01925 838864

Job No.	Drawing No.	Revision.
5598	01–01	–

Scale	1:2500 @ A3	Date	May 2013

Drawn By	Designed By	Checked By
MG	JEL	JEL