

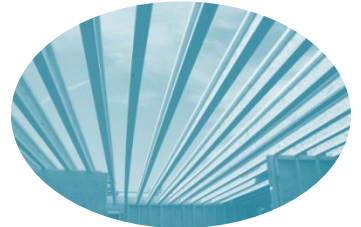
Flood Risk Assessment



Wakefield Road,
Mapplewell



Client: JRP Associates



Project Number: 17547



December 2017



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1.0 INTRODUCTION

- 1.1 This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of JRP Associates in respect of a planning application for the proposed residential development at land by Wakefield Road, Mapplewell.

Table 1.1 - Site Summary

Site Name	Land at Wakefield Road, Mapplewell
Location	Wakefield Road, Mapplewell, S75 6FZ
NGR (approx.)	434007, 409912
Application Site Area (ha)	3.2ha
Development Type	Residential
NPPF Vulnerability	Low
EA Flood Zone	Flood Zone 1
EA Office	Yorkshire
Local Planning Authority	Barnsley Metropolitan Borough Council

Sources of Data

- 1.2 The report is based on the following information:
- (i) Feasibility Sketch Layout by JRP Architects (**Appendix B**)
 - (ii) Environment Agency information
 - (iii) Barnsley Strategic Flood Risk Assessment
 - (iv) Yorkshire Water Sewer Records

Existing Site

- 1.3 The site in question is located on land to the east of Wakefield Road in Mapplewell which is a village located approximately 3km north of Barnsley, South Yorkshire. A site location plan is included as **Figure 1.1** for reference.
- 1.4 A site topographical survey has been undertaken for the development site and is included in **Appendix A** of this report. The high point of site is to the north-west corner of site where the site is approximately 103m AOD. The site falls to a low point in the south-eastern corner. The SE corner of site is at approximately 95m AOD.
- 1.5 The closest watercourse to site is located approximately 700m south of site which is a tributary of the River Dearne which is approximately 1.3km south of site. The River Dearne flows from west to east and outfalls to the River Don approximately 19km to the east.



Figure 1.1 - Site Location

Proposed Development

- 1.6 The proposed development comprises of construction of a new residential housing development along with associated access roads (see **Appendix B**). Access to the proposed development will be taken from a new access road off Wakefield Road to the west of site.

Flood Risk Planning Policy

National Planning Policy Framework

- 1.7 The NPPF¹ sets out the Government's national policies on different aspects of land use planning in England in relation to flood risk. Planning Practice Guidance is also available online².
- 1.8 The Planning Practice Guidance sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible, and stresses the importance of preventing increases in flood risk off site to the wider catchment area.
- 1.9 The Planning Practice Guidance also states that alternative sources of flooding, other than fluvial (river flooding), should also be considered when preparing a Flood Risk Assessment.

¹ National Planning Policy Framework, CLG, March 2012

² Planning Practice Guidance. <http://planningguidance.planningportal.gov.uk/>.

- 1.10 This Flood Risk Assessment is written in accordance with the NPPF and the Planning Practice Guidance.

Flood Zones

- 1.11 The Flood Zone Map for Planning has been prepared by the Environment Agency. This identifies areas potentially at risk of flooding from fluvial or tidal sources. An extract from the mapping is included as **Figure 1.2**.

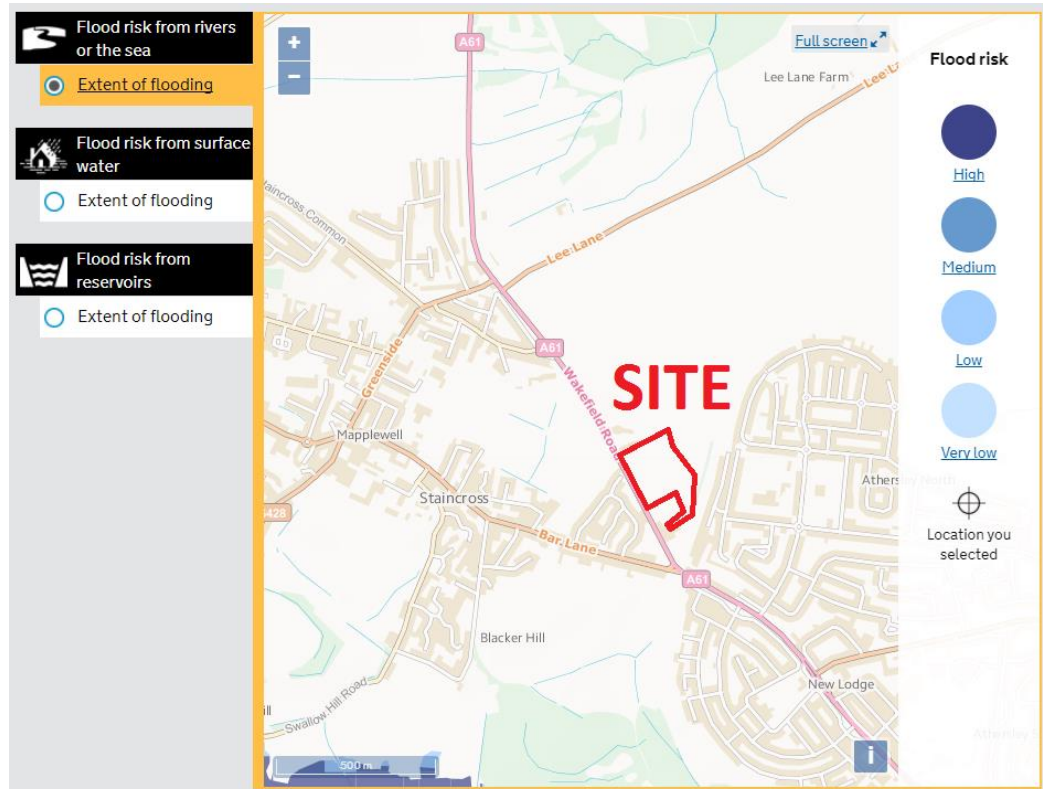


Figure 1.2 - Environment Agency Flood Zone Mapping

- 1.12 The site is shown to be located entirely within Flood Zone 1 (Low Probability) therefore the site is considered to be low risk of flooding. Flood Zone 1 is defined as land assessed as having less than a 0.1% annual probability of flooding from fluvial and tidal sources.
- 1.13 Table 2 of the Planning Practice Guidance classifies land use. Under these classifications the proposed residential development is considered to be 'More Vulnerable' to the potential impacts of flooding.
- 1.14 Table 3 of the Planning Practice Guidance identifies that any development is considered appropriate within Flood Zone 1.

Table 3 of the Planning Practice Guidance

Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone 1	✓	✓	✓	✓	✓
Flood Zone 2	✓	✓	Exception test required	✓	✓
Flood Zone 3a	Exception test required	✓	x	Exception test required	✓
Flood Zone 3b	Exception test required	✓	x	x	x

Other Relevant Policy and Guidance

Strategic Flood Risk Assessment

- 1.15 The Barnsley Strategic Flood Risk Assessment³ (SFRA) was prepared to review flood risks on a much wider scale to assess the potential for new development within the study area. The SFRA was used as an evidence base for Local Development Frameworks for each Local Planning Authority.
- 1.16 The SFRA therefore aims to bring together all available flood risk information for a variety of sources to provide a robust assessment. The SFRA therefore is useful for this site-specific FRA by highlighting available data and instances of known flooding in the area. Although written under the guidance of Planning Policy Statement 25, the SFRA is still considered to include relevant information.

2.0 POTENTIAL SOURCES OF FLOOD RISK

- 2.1 The table below identifies the potential sources of flood risk to the site, and the impacts which the development could have in the wider catchment prior to mitigation. These are discussed in greater detail in the forthcoming section. The mitigation measures proposed to address flood risk issues and ensure the development is appropriate for its location are discussed within **Section 3.0**.

Table 2.1 - Pre-Mitigation Sources of Flood Risk

Flood Source	Potential Risk				Description
	High	Medium	Low	None	
Fluvial			X		The site is located in Flood Zone 1 with a low risk of fluvial flooding.
Tidal				X	The site is far removed from any tidal influence.
Canals				X	None present.
Groundwater			X		Ground conditions are not conducive to fluctuating groundwater levels, however several historic spring features are noted on OS maps which will need to be dealt with.
Reservoirs and waterbodies				X	The site is shown to fall outside of the area at risk of reservoir failure.
Sewers			X		The site within a largely undeveloped area. Any sewers present will provide minimal risk.
Pluvial runoff		X			Areas of site shown to be within Medium Risk area of surface water flooding.
Effect of Development on Wider Catchment	X				The development will increase the area of impermeable surfaces leading to a potential increase in runoff.

Fluvial Flood Risk

- 2.2 As previously mentioned, the site is shown to be within Flood Zone 1 (Low Probability) at low risk of flooding from fluvial and tidal sources.
- 2.3 Mitigation measures to address the residual risk posed by the watercourse along the northern boundary are discussed within **Section 3.0** of this report

Groundwater Flood Risk

- 2.4 Subject to completion of site investigation to confirm we would assume that natural ground water level is located well below the site surface and the nature of the strata means it unlikely that there will be perched water above this level.
- 2.5 We therefore do not consider any risk of groundwater flooding affecting the development subject to final confirmation upon completion of suitable site investigation.

Flood Risk from Reservoirs & Large Waterbodies

- 2.6 Reservoir failure flood risk mapping has been prepared by the Environment Agency, this shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. The map displays a worst case scenario and is only intended as a guide. An extract from the mapping is included as **Figure 2.1**.

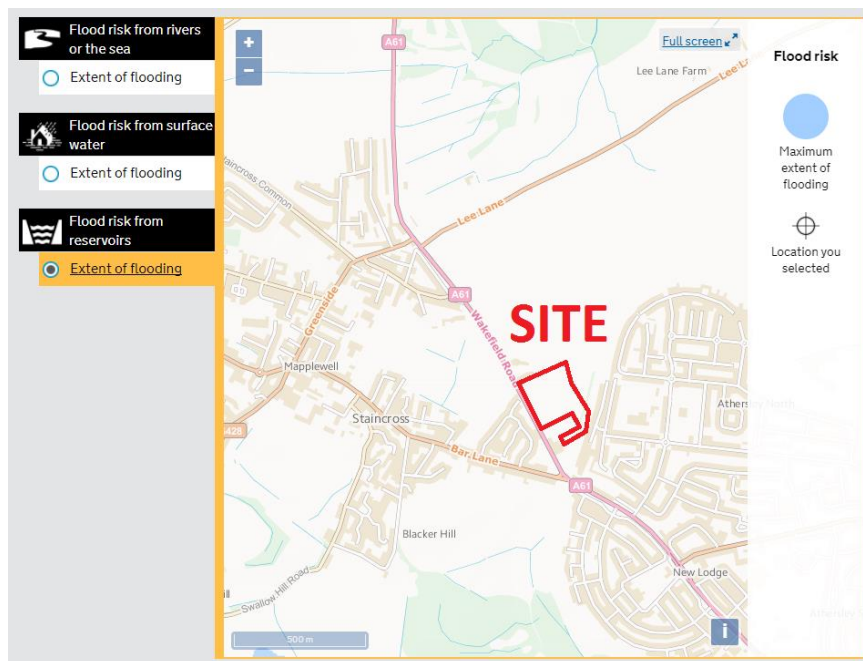


Figure 2.1 - Environment Agency Reservoir Failure Flood Risk Map

- 2.7 Mapping demonstrates the site and possible access routes are far removed from the flood extent associated with flooding from large reservoirs. A review of Ordnance Survey mapping shows no other substantial lakes or waterbodies in the vicinity of the site that could pose a risk for flooding.
- 2.8 As such, the risk posed from this source is considered negligible.

Flood Risk from Sewers

- 2.9 The site is located in a largely village setting surrounded by residential properties. Yorkshire Water sewer records indicate that the closest sewer to the development is a Foul sewer located running beneath Wakefield Road to the east of site. (see **Appendix C**).
- 2.10 Records indicate that the YW foul sewer is 2m below ground level. Flooding from sewers is therefore considered to pose a minimal risk to the proposed development.

Pluvial Flood Risk

- 2.11 Risk of flooding from surface water mapping has been prepared by the Environment Agency, this shows the potential flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground, but lies on or flows over the ground instead. An extract from the mapping is included as **Figure 2.2**.

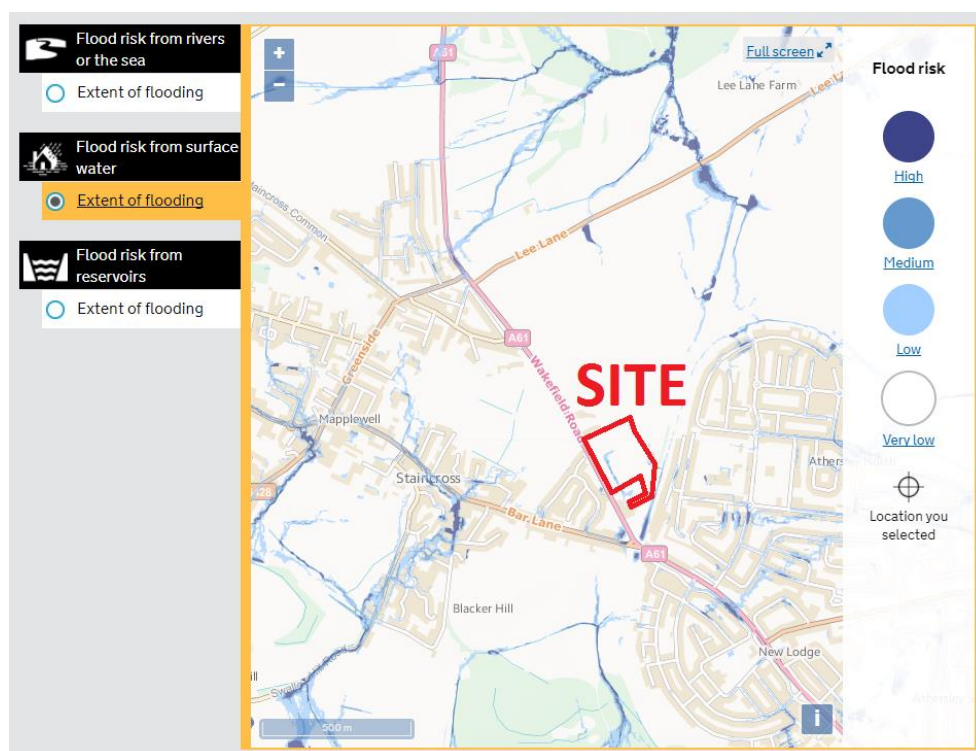


Figure 2.2 - Risk of Flooding from Surface Water Mapping

- 2.12 Interactive pluvial mapping indicates that part of the site is at medium risk of pluvial flooding with a depth up to 900mm. This area correlates with a small depression through the centre of the site. The proposed development will raise levels in this area. The site will have a positive drainage system in place which will intercept surface water flows and therefore remove the risk of pluvial flooding.

Effect of Development on Wider Catchment

Development Drainage

- 2.13 The current site is Greenfield with an area of 3.2Ha
- 2.14 The proposed development will add an impermeable footprint to this site, altering the surface water runoff regime. Due to the lack of information on the existing drainage arrangements for the site it is therefore assumed the site will discharge surface water at Greenfield run off rate into a watercourse to the south of site. Percolation testing performed on site has proven that ground conditions are not suitable for soakaways.
- 2.15 An appropriate surface water drainage strategy will be required to ensure the proposed development does not adversely affect flood risk elsewhere as a result of changing patterns of surface water runoff/development drainage.

3.0 FLOOD RISK MITIGATION

- 3.1 **Section 2.0** has identified the sources of flooding which could potentially pose a risk to the site and the proposed development. This section of the FRA sets out the mitigation measures which are to be considered within the proposed development detail design to address and reduce the risk of flooding to within acceptable levels.

Site Arrangements

Sequential Arrangement

- 3.2 The Flood Zone mapping shows the site to be located within Flood Zone 1.

Finished Levels

- 3.3 Given the site's location within Flood Zone 1, there are no specific requirements for finished floor levels with regard to flood risk. These levels may be set in accordance with wider design requirements.
- 3.4 Nevertheless, it is recommended that a nominal elevation 150-300mm above existing levels should be provided to deter any potential overland flows from entering the proposed buildings.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- 4.1 This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of JRP Associates in respect of a planning application for the proposed residential development at land by Wakefield Road, Mapplewell.
- 4.2 This report demonstrates that the proposed development is not at significant flood risk, and simple mitigation measures have been recommended to address any residual risks that may remain. The identified risks and mitigation measures are summarised within **Table 4.1**.

Table 4.1 - Summary of Flood Risk Assessment

Flood Source	Proposed Mitigation Measure
Pluvial	FFL's to be set above existing ground levels. External Areas to be designed to fall away from buildings.
Impact of the Development	Strategic surface water drainage strategy to be prepared for wider development will ensure a sustainable approach to surface water management.

- 4.3 In compliance with the requirements of National Planning Policy Framework, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider catchment area as a result of suitable management of surface water runoff discharging from the site.

PREPARED BY

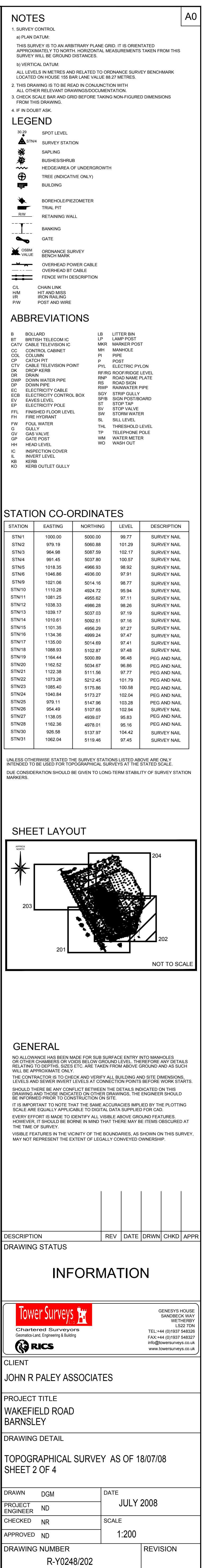


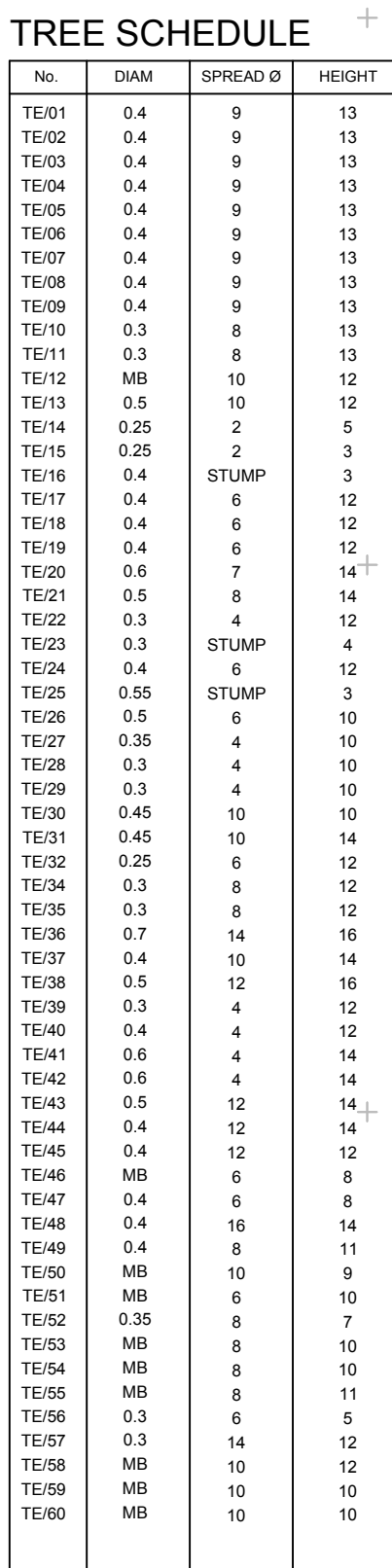
Connor Richings

On Behalf of Topping Engineers

Appendix A

Existing Site Layout

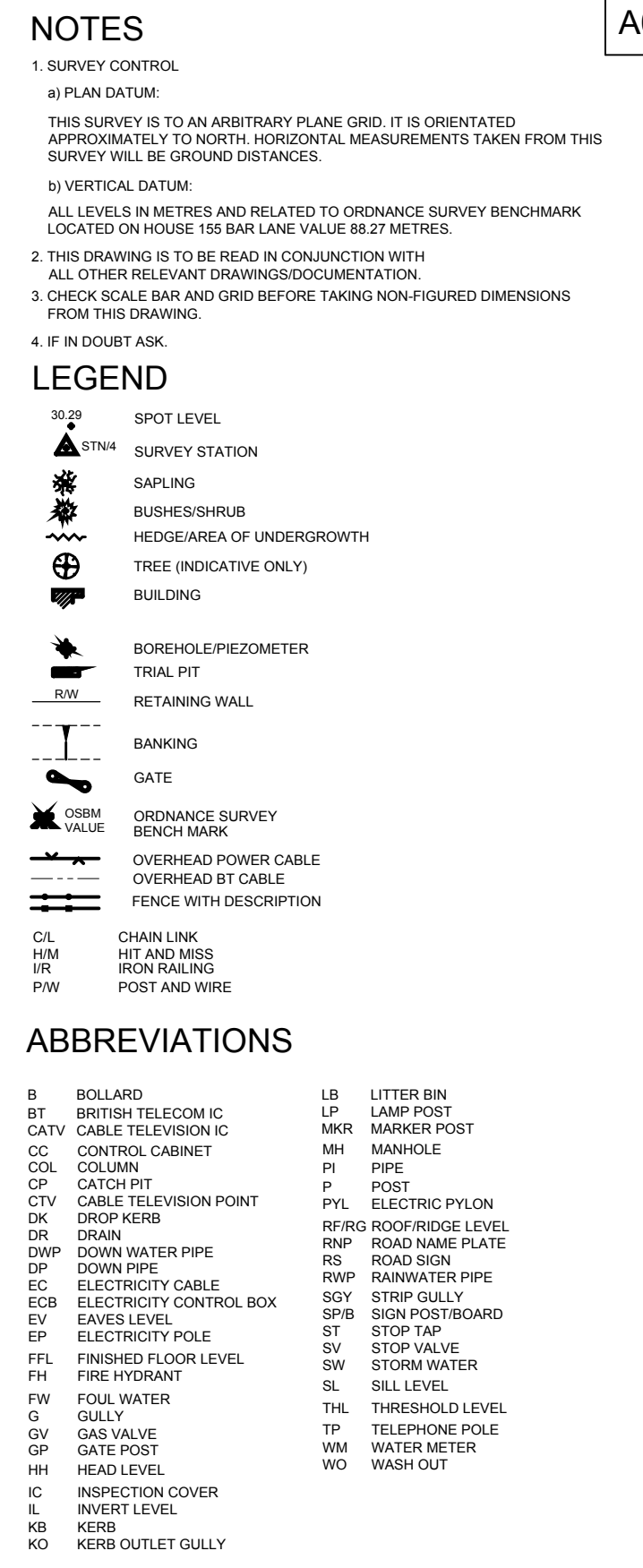




REE SCHEDULE			
TEE	DAYS	START	HEIGHT
TE01	0-4	9	13
TE02	0-4	9	13
TE03	0-4	9	13
TE04	0-4	9	13
TE05	0-4	9	13
TE06	0-4	9	13
TE07	0-4	9	13
TE08	0-4	9	13
TE09	0-4	9	13
TE10	0-3	8	13
TE11	0-3	8	13
TE12	0-3	8	13
TE13	0-1	10	12
TE14	0-25	2	6
TE15	0-4	9	13
TE16	0-4	9	13
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TE59	0-4	9	13
TE60	0-4	9	13

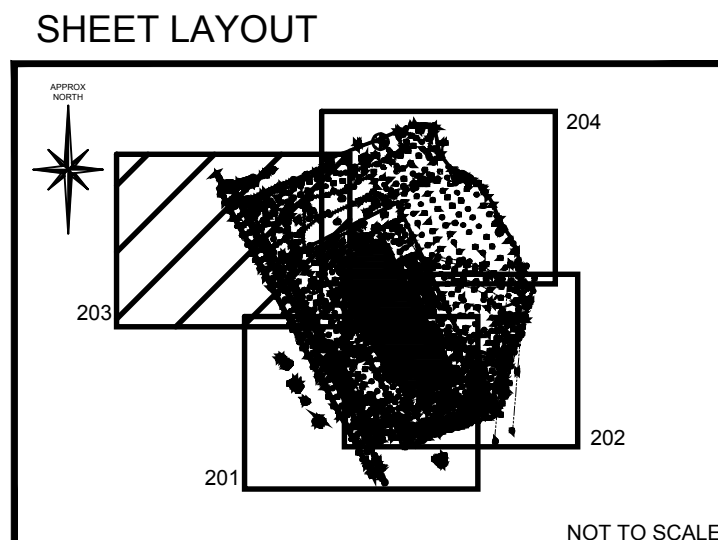
NOTE: $\frac{+}{-}$

- MB "X" NO. - MULTIPLE HOLES FOLLOWED BY NUMBER OF
- DIAM - GIRTH CIRCUMFERENCE MEASURED AT APPROXIMATELY 1.5M ABOVE GROUND LEVEL.
- SPREAD - DIAMETER OF CANOPY. (TREE SPREADS ARE INDICATIVE ONLY AND ARE NOT REPRESENTATIVE OF THE GENERALIZED CANOPY SIZE, AND MAY NOT REPRESENT THE TRUE CANOPY POSITION AS OUTLINED ON SITE - TREE HOLES MAY NOT SIT CENTRALLY TO THE CANOPY.)
- HEIGHT - APPROXIMATE HEIGHT TO TOP OF CANOPY - ESTIMATED FROM GROUND LEVEL.
- ATTENTION SHOULD BE PAID TO THE ORIGINAL TOPOGRAPHICAL BRIEF AS TO WHAT TREES HAVE ACTUALLY BEEN SCHEDULED, I.E. THOSE TREES LARGER THAN DIAMETER "X" OR "NO" TREES WITHIN THE IMMEDIATE SURVEY LIMITS. (THIS IS NOT THE CASE UNLESS OTHERWISE SPECIFIED AS INCLUDING "OFF SITE" TREES).



STATION CO-ORDINATES				
STATION	EASTING	NORTHING	LEVEL	DESCRIPTION
STN7	1000.00	5000.00	99.77	SURVEY NAIL
STN2	970.19	5060.08	101.29	SURVEY NAIL
STN3	980.00	5050.00	100.00	SURVEY NAIL
STN4	961.45	5078.00	100.07	SURVEY NAIL
STN5	951.35	5082.00	100.00	SURVEY NAIL
STN6	493.00	5070.00	97.00	SURVEY NAIL
STN7	102.00	5014.16	98.77	SURVEY NAIL
STN8	495.00	4924.37	99.54	SURVEY NAIL
STN11	205.15	4955.52	100.00	SURVEY NAIL
STN12	103.83	4925.00	99.00	SURVEY NAIL
STN13	503.00	4915.00	97.00	SURVEY NAIL
STN14	192.61	4958.01	100.00	SURVEY NAIL
STN15	151.35	4945.28	97.27	SURVEY NAIL
STN16	151.35	4945.28	97.27	SURVEY NAIL
STN17	135.60	5014.49	97.41	SURVEY NAIL
STN18	512.87	4950.00	97.00	SURVEY NAIL
STN19	154.64	5000.00	96.98	REG AND NAIL
STN20	142.32	5034.67	96.98	REG AND NAIL
STN21	111.16	5050.00	96.98	REG AND NAIL
STN22	97.28	5127.45	101.74	REG AND NAIL
STN23	517.58	4950.00	96.98	REG AND NAIL
STN24	504.24	5137.27	102.04	REG AND NAIL
STN25	89.11	5147.06	102.00	REG AND NAIL
STN26	215.02	5125.00	102.04	REG AND NAIL
STN27	138.00	4907.00	96.93	REG AND NAIL
STN28	513.79	4950.00	96.98	SURVEY NAIL
STN29	60.58	4951.61	101.42	SURVEY NAIL
STN30	502.04	4950.00	97.45	SURVEY NAIL

UNLESS OTHERWISE STATED THE SURVEY STATIONS LISTED ABOVE ARE ONLY INTENDED TO BE USED FOR TOPOGRAPHICAL SURVEYS AT THE STATED SCALE.
DUE CONSIDERATION SHOULD BE GIVEN TO LONG-TERM STABILITY OF SURVEY STATION MARKERS.



GENERAL

NO ALLOWANCE HAS BEEN MADE FOR SURFACE EARTH INTO MANHOLES OR OTHER CHAMBERS OR VOIDS BELOW GROUND LEVEL. THEREFORE ANY DETAILS OF SUCH STRUCTURES, PROJECT, OR EARTH TO BE REMOVED OR SUBSTITUTED WILL BE APPROXIMATE ONLY.

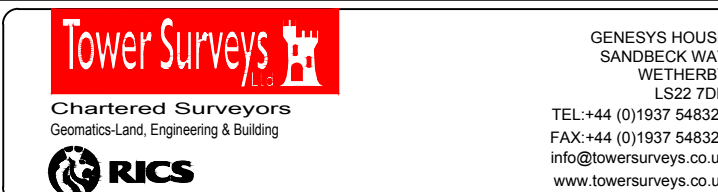
THESE PLANS ARE TO BE USED TO VERIFY ALL BUILDING AND SITE DIMENSIONS, LEVELS AND SEWER INVERT LEVELS AT CONNECTION POINTS BEFORE WORK STARTS.

SHOULD THERE BE ANY CONFLICT BETWEEN THE DETAILS AS INDICATED ON THIS PLAN AND THE FIELD SURVEY, THE FIELD SURVEY SHALL PREVAIL. THE ENGINEER SHOULD BE INFORMED PRIOR TO CONSTRUCTION ON SITE.

IT IS IMPORTANT TO NOTE THAT THE SAME ALLOWANCES IMPLIED BY THE PLOTTING OF THE DATA MAY ALSO APPLY TO OTHER DATA. THEREFORE, THE ENGINEER SHOULD BE AWARE THAT ANY ERROR IN THE DATA WILL BE REFLECTED IN THE PLOTTING. ANY ERROR SHOULD BE MADE TO IDENTIFY ALL VISIBLE ABOVE GROUND FEATURES. HOWEVER, IT IS IMPORTANT TO REMEMBER IN MIND THAT THERE MAY BE ITEMS OCCURRED AT ANY LOCATION THAT ARE NOT VISIBLE.

VISIBLE FEATURES IN THE VICINITY OF THE BOUNDARIES, AS SHOWN ON THIS SURVEY, MAY NOT REPRESENT THE EXTENT OF LEGALLY CONVEYED OWNERSHIP.

INFORMATION



CLIENT

JOHN R PALEY ASSOCIATES

PROJECT TITLE

WAKEFIELD ROAD

BARNESLEY

DRAWING DETAIL

TOPOGRAPHICAL SURVEY AS OF 18/07/08
SHEET 2 OF 4

SHEET 3 OF 4

DRAWN	DGM	DATE
		JULY 2009

PROJECT ENGINEER	ND	JULY 2008
ESTIMATE		55.45

CHECKED	NR	SCALE
APPROVED	ND	1:200

DRAWING NUMBER	REVISION
----------------	----------

R-Y0248/203



1. SURVEY CONTROL
 - a) PLAN DATUM:

THIS SURVEY IS TO AN ARBITRARY PLANE GRID. IT IS ORIENTATED APPROXIMATELY TO NORTH. HORIZONTAL MEASUREMENTS TAKEN FROM THIS SURVEY WILL BE GROUND DISTANCES.
 - b) VERTICAL DATUM:

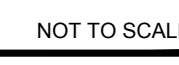
ALL LEVELS IN METRES AND RELATED TO ORDNANCE SURVEY BENCHMARK LOCATED ON HOWE 156 BAR LANE VALLEY 88.27 METRES
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS/DOCUMENTATION.
3. CHECK SCALE BAR AND GRID BEFORE TAKING NON-FIGURED DIMENSIONS FROM THIS DRAWING.
4. IF IN DOUBT ASK.

	SPOT LEVEL
	SURVEY STATION
	SAPLING
	BUSHES/SHRUB
	HEDGE/AREA OF UNDERGROWTH
	FREE (INDICATIVE ONLY) BUILDING
	BOREHOLE/PIEZOMETER
	TRIAL PIT
	RETAINING WALL
	BANKING
	GATE
	OSRM VALVE
	ORDNANCE SURVEY BENCH MARK
	OVERHEAD POWER CABLE
	OVERHEAD BT CABLE
	FENCE WITH DESCRIPTION

B	BOLLARD	LB	LIGHT BIN
BT	BRITISH TELECOM K	LP	LAMP POST
CAT	CABLE TELEVISION	MP	MOWER MOWER FOOT
CC	CONTROL CABINET	M	MANHOLE
CL	COLUMN	R	RH
CM	CATCH PIT	P	POST
CTV	CABLE TELEVISION PO	PPL	ELECTRIC PYLON
DR	DRIVE	RND	RIGID ROAD NAME PL
DR	DRAIN	RSD	ROAD SIGN
DR	DOWN WATER PIPE	RSM	ROTARY METER
DR	DOWN PIPE	SG	STOP SIGN
EC	ELECTRICITY CABLE	SGH	SEMI STOP SIGN
EV	ELEVATION	SH	STOP SIGN
EP	ELECTRICITY CABLE	SV	STOP VALVE
EP	ELECTRICITY CABLE	SW	STOP WATER
FP	FINISHED FLOOR LEVEL	SL	SKILL LEVEL
FR	FIRE RESISTANT	TH	THRESHOLD LEVEL
FW	FOOT WATER	TP	TELEPHONE POLE
G	GULLY	WM	WATER METER
GN	GRASS VALVE	WSH	WASH OUT
GP	GATE POST		
HI	HEAD LEVEL		
IC	INSPECTION COVER		

STATION	EASTING	NORTHING	LEVEL	DESCRIPTION
STW1	900.00	500.00	99.77	SURVEY NAIL
STW2	911.58	498.82	99.77	SURVEY NAIL
STW3	964.98	509.59	100.17	SURVEY NAIL
STW4	991.49	495.83	100.17	SURVEY NAIL
STW5	991.49	495.83	100.17	SURVEY NAIL
STW6	1040.89	495.00	99.71	SURVEY NAIL
STW7	1021.00	495.00	99.71	SURVEY NAIL
STW10	1110.28	498.72	99.94	SURVEY NAIL
STW11	1110.28	498.72	99.94	SURVEY NAIL
STW12	1033.33	498.26	99.26	SURVEY NAIL
STW13	1038.17	507.23	99.26	SURVEY NAIL
STW14	1038.17	507.23	99.26	SURVEY NAIL
STW15	1131.35	498.26	99.21	SURVEY NAIL
STW16	1131.35	498.26	99.21	SURVEY NAIL
STW17	1050.00	504.60	97.47	SURVEY NAIL
STW18	1050.00	504.60	97.47	SURVEY NAIL
STW19	1154.44	509.27	98.49	SURVEY NAIL
STW20	1154.44	509.27	98.49	SURVEY NAIL
STW21	1182.52	504.49	98.86	PEG AND NAIL
STW22	1182.52	504.49	98.86	PEG AND NAIL
STW23	1076.26	521.45	101.79	PEG AND NAIL
STW24	1076.26	521.45	101.79	PEG AND NAIL
STW25	1182.52	504.49	98.86	PEG AND NAIL
STW26	1182.52	504.49	98.86	PEG AND NAIL
STW27	1134.09	499.07	95.83	PEG AND NAIL
STW28	1134.09	499.07	95.83	PEG AND NAIL
STW29	1062.58	519.97	104.42	SURVEY NAIL
STW30	1062.58	519.97	104.42	SURVEY NAIL

SHEET LAYOUT

[illegible]

JOHN R PALEY ASSOCIATES

WAKEFIELD ROAD

DRAWING DETAIL

DRAWN	DGM	DATE
		JULY 2000

2008

REVISION

Appendix B

Proposed Site Layout



CLIENT:
PIPESTONE LTD

PROJECT:
EAST OF WAKEFIELD ROAD,
MAPLEWELL
DRAWING:
FEASIBILITY SKETCH LAYOUT

DRAWING NUMBER:
08 4145 SK03

SCALE @ A1:

DRAWN: JRP
CHECKED: JRP
DATE: MAY 2017
DATE:



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Appendix C

Yorkshire Water Sewer Records

YORKSHIRE WATER PROTECTION OF MAINS AND SERVICES

1. The position of Yorkshire Water Services Ltd (YWS) apparatus shown on the existing mains record drawing(s) indicates the **general** position and nature of our apparatus and the accuracy of this information cannot be guaranteed. Any damage to YWS apparatus as a result of your works may have serious consequences and you will be held responsible for all costs incurred. Prior to commencing major works, the exact location of apparatus must be determined on site, if necessary by excavating trial holes. The actual position of such apparatus and that of service pipes which have not been indicated must be established on site by contacting the Customer Helpline on 0845 124 24 24 for both water and sewerage.
2. The public sewer and water network is lawfully retained in its existing position and the sewerage and water undertaker is entitled to have it remain so without any disturbance. The provisions of section 159 of the Water Industry Act 1991 provides that the undertaker may "inspect, maintain, adjust, repair or alter" the network. Those rights are given to enable the undertaker to perform its statutory duties. Any development of the land or any other action that unacceptably hindered the exercise of those rights would be unlawful. The provisions contained in Section 185 of the Water Industry Act 1991 state that where it is reasonable to do so, a person may require the water supply undertaker to alter or remove a pipe where it is necessary to enable that person to carry out a proposed change of use of the land. The provisions contained in Section 185 also require the person making the request to pay the full cost of carrying out the necessary works.
3. Ground levels over existing YWS apparatus are to be maintained. Sewers in highways will **generally** be laid to give 1200mm of cover from finished ground level working to kerb races, other permanent identification of the limits of the road or to an agreed line and level. Substantial increases or decreases to this 1200mm depth of cover will result in the sewer being re-laid at your expense. Water mains and services will **generally** be laid with a minimum of 750mm depth of cover however some mains and services usually those installed over 50 years ago may have less ground cover.
4. If surface levels are to be decreased / increased significantly the effects on existing water supply apparatus will be carefully considered and if any alterations are necessary, the costs of the alterations will be recharged to you in full. Outlets on fire hydrants must be no more than 300mm below the new levels and all surface boxes must be adjusted as part of the scheme.
5. To enable future repair works to be carried out without hindrance; any pipe, cable, duct, etc. installed parallel to a water main or service pipe should not be installed directly over or within 300mm of a water main or service pipe or 1000mm of a waste water asset. Where a pipe, cable, duct, etc. crosses a main or service it should preferably cross perpendicular or at an angle of no less than 45° and with a minimum clearance of 150mm. These requirements apply to activities within an existing highway and are relevant to the installation of pipes, cables, ducts, etc. up to and including 250mm in diameter (*see illustration below*). Necessary protection measures for installations greater than 250mm in diameter and/or in private land will need to be agreed on an individual basis. Installations within a new development site must comply with the National Joint Utilities Group publication Volume 2: NJUG Guidelines On The Positioning Of Underground Utilities Apparatus For New Development Sites.
6. All excavation works near to YW apparatus should be by hand digging only.
7. Backfilling with a suitable material to a minimum 300mm above YW apparatus is required.
8. Adequate support must be provided where any works pass under YW apparatus.
9. Jointing chambers, lighting columns and other structures must be installed in such a way that future repair or maintenance works to YW apparatus will not be hindered.
10. Apparatus such as; railings, sign posts, etc. must not be placed in such a way that they prevent access to or full operation of controlling valves, hydrants or similar apparatus. YWS surface boxes must not be covered or buried. Any adjustment, alteration or replacement of manhole covers must be agreed on site prior to the commencement of the works with a YWS Inspector who may be contacted via our Call Centre on 0845 124 24 24.
11. Explosives shall not be used within 100 metres of any Yorkshire Water Services apparatus or installations.
12. Vibrating plant should not be used directly over any apparatus. Movement or operation by vehicles or heavy plant is not to be permitted in the immediate vicinity of YWS plant or apparatus unless there has been prior consultation and, if necessary, adequate protection provided without cost to YWS.
13. **Under no circumstances** should thrust boring or similar trenchless techniques commence until the actual position of the Company's mains/services along the proposed route have been confirmed by trial holes.
14. Any alterations to the highway should be notified following the procedures outlined in the New Road and Street Works Act 1991 Code of Practice; Measures Necessary Where Apparatus Is Affected By Major Works (Diversions Works).

15. You will be held responsible for any damage or loss to YWS apparatus during and after completion of work, caused by yourselves, your servant or agent. Any damage caused or observed to YWS plant or apparatus should be immediately reported to YWS. Should YW incur any costs as a result of non-compliance with the above, all costs will be rechargeable in full.
16. You should ensure that nothing is done on the site to prejudice the safety or operation of YWS employees, plant or apparatus.
17. In accordance with the New Roads and Street Works Act 1991, Chapter 22, Part 3, Section 80. The location of any identified YW asset "*which is not marked, or is wrongly marked, on the records made available* " should be communicated back to Yorkshire Water. The location of the apparatus should be identified on copies of the supplied plans which should be returned to Yorkshire Water (Asset Records Team) with photographic supporting evidence where possible.
18. The Government has decided that responsibility for private sewers serving two or more properties and lateral drains (the section of pipe beyond the boundary of a single property, connecting it to the public sewer) will be transferred to the water companies on Oct 1 2011. Private pumping stations will also transfer during the period 1 October 2011 – 1 Oct 2016. Records of these assets may not yet be shown on the existing mains record drawing(s). If you encounter any of these assets you must inform Yorkshire Water Services Ltd (YWS).
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20. This information is for guidance only and the position and depth of any YW apparatus is approximate only. Likewise, the nature and condition of any YW apparatus cannot be guaranteed. YW has no responsibility for recording the locations of privately owned apparatus. As of 1 October 2011, there may be some lateral drains and/or public sewers which are not documented on YW records but may still be present. For the avoidance of doubt, this information is not a substitute for appropriate professional and/or legal advice. YW accepts no responsibility for any inaccuracy or omissions in this information. The actual position of YW apparatus must be determined on site by excavating trial holes by hand. YW requires a minimum of two working days' written notice of the intention to excavate any trial holes before any excavation can be undertaken. If there are any queries in this respect please contact Yorkshire Water on 0845 124 24 24.

Sewer Legend

	Combined Sewer		S24 Combined Sewer
	Surface Water Sewer		S24 Surface Water Sewer
	Foul Sewer		S24 Foul Sewer
	Section 104 Sewer		Public Rising Main
	Pumping Station		Abandoned Sewer
	Public Sewage Treatment Works		Syphon Sewer & Vacuum Sewer
		+	Property Identifier

Water Legend

	Water Main 4" and below
	Water Main 4" and above
	Raw Water Main
	Private Water Main
	Fire Hydrant
	Pumping Station

