



PROPOSED RESIDENTIAL DEVELOPMENT
LAND OFF NOTTINGTON LANE, WEY VALLEY,
WEYMOUTH

PRELIMINARY
FLOOD RISK AND DRAINAGE APPRAISAL

Report 21311/DR/1/2
May 2013

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1.0 INTRODUCTION

1.1 This drainage strategy is for a proposed development of in the order of 350 to 400 dwellings on land to the south of Nottingham Lane and to the west of the Dorchester Road, Weymouth. The site is identified for residential development in the pre-submission draft of the Weymouth, Portland and West Dorset Local Plan and is referred to as the Wey Valley site. This report identifies any flood risk issues and gives the principles on which the foul and the surface water management could be implemented.

2.0 LOCATION AND SITE DESCRIPTION

2.1 The site location in the context of Weymouth is shown on figure 1. It is bounded by Nottingham Lane on its northern frontage, the rear gardens to a single row of residential properties along its eastern boundary and mainly agricultural land along its western and southern boundaries. Nottingham Court, a development of private apartments abuts approximately one third of the western boundary at the northern end. The site is currently mainly used for pasture apart from three areas of dense tree growth the most prominent of which is triangular plot adjacent to Nottingham Lane.

2.2 The total site area considered in this report is approximately 15.3 Ha. The land slopes down from highest spot in the south east corner at a level of 28.7m AOD to the lowest point in the south west corner at 12.7m. The steepest gradient is in the order of 1:11 where the land slopes down from the eastern boundary.

2.3 The land drains to a ditch located in the north west corner of the site and this ditch discharges into a culvert which passes under Nottingham Lane and discharges into the River Wey approximately 92m to the north. The plan of adopted sewers provided by Wessex Water as shown in appendix 1 shows that surface water from the adjacent Nottingham Court also discharges into this culvert. The plan of adopted sewers indicates that no surface water or foul sewers cross this site.

2.4 A preliminary site investigation indicates that the underlying soil strata exhibits poor infiltration properties and that it is unlikely that retained surface water would readily soakaway and neither would soakaway systems provide a viable means of surface water management.

3.0 FLOOD RISK

3.1 At the planning application stage it will be necessary to prepare a Flood Risk Assessment which will address matters of the risk of flooding to properties on the site from external sources, the flood risk that development on the site would pose for adjacent properties and land and the risk of flooding during extreme 'exceedance' rainfall events. At this stage this report only considers the background conditions.

3.2 The site is within the catchment of the River Wey which is classed as a main river and is indicated as a dark blue line on Figure 1 which is an extract from the Environment Agency flood map. The flood map indicates that the site is within flood zone 1 where the annual flood risk is less than 0.1% or 1 in 1000. The areas shaded in blue on the plan are at a greater risk of flooding.

3.3 In 2009 consultants Royal Haskoning published the Level 2 Strategic Flood Risk Assessment (SFRA) on behalf of Weymouth and Portland Borough Council. The Wey Valley site has been identified for possible residential development for some time and the potential flood risk was specifically considered as Area 7 in the SFRA.

3.4 In respect of the site, the report stated the following under the heading current flood risk :-

'Area entirely within FZ 1. No historic events within the area itself, some adjacent incidents resulting in road closures and internal flooding. Low risk of flooding directly from rivers or the sea. No defences present.'

The SFRA considered that due to the relative level of the site compared to the River Wey that there was a minimal risk of the site flooding as a result of climate change. It identified that surface water flooding on Nottingham Lane could have an impact on access to the site. It concluded that from a flood risk perspective that the site is suitable for development subject to the following additional considerations:-

'Downstream impacts are required to be negligible should development go ahead as Radipole Nature Reserve has no capacity for additional run-off / flow. Surface water to be managed onsite through mitigation including use of SuDS. It is recommended that if development is proposed a detailed study of potential downstream effects should take place.'

Overland Flow

3.5 In extreme rainfall events surface water runoff would surcharge the piped drainage system and run overland to potentially cause flooding. The risk of flooding on the site from overland flow is presented on the southern and eastern boundaries.

3.6 The southern boundary of the land is at the crest of the catchment and thus the risk of inflow from external sources is minimal. However, measures would be necessary to manage overland flow from the site to the adjacent land.

3.7 The eastern boundary of the site is also close to the crest of the catchment. Significantly the B3159 Dorchester Road would tend to intercept surface water with origins to the east and would contain such flow within the road kerbs. The risk of overland flow arriving at the eastern boundary is also low but cut off drains would probably be necessary to manage any residual flow.

4.0 SURFACE WATER MANAGEMENT

4.1 The rate and the volume of runoff emanating from impermeable surfaces such as roads, roofs and hard standings associated with residential development will generate a greater volume and rate of runoff than would be the case from the existing grass pasture.

4.2 The objective of the surface water management measures would be to ensure that during a 1 in 100 year rainfall event (including a 30% contingency for climate change) that the volume and rate of flow of runoff discharging into the culvert in the north west corner of the site is no greater that would occur under the current green field conditions, using sustainable urban drainage measures (SuDs).

4.3 It has been established that soakaways are unlikely to form a viable means of surface water management and thus the most likely means of managing flow would be via a surface attenuation pond. The pond shown in figure 2 gives an indication of the scale of the facility that would be required. This pond would have the capacity to store surface water generated by a 1:100 year rainfall event (including a 30% climate change contingency). Discharge into the existing ditch would be via a pipe with flow controlled to greenfield runoff rates by a control device or devices such as a hydrobrake. The pond shown would have a maximum water depth of 0.9m but this would only occur during the most extreme event. During periods of no rainfall the pond would normally be dry although there is a potential to retain a shallow depth of water in the base of the pond to enable reeds and other water dependent species to be sustained.

4.4 The pond show on figure 2 demonstrates that there is a viable means of managing surface water discharge using SuDs techniques. There are potentially other measures which could be considered during the detailed design of the scheme.

5.0 FOUL DRAINAGE

5.1 Wessex Water is the adopting water authority for the area and was consulted with regard to the foul drainage of this site. The adopted sewer plan in appendix 1 showing the public sewer system in the vicinity of the site was provided by Wessex Water. They also provided advice on the capacity of the local system and the means of foul drainage for the development and that is what is referred to in the following paragraphs.

5.2 The gravity system to the east has a small diameter and has limited capacity to accommodate additional flows. The gravity combined system to the west has limited capacity to accommodate additional flows and connection to this sewer may require a third party land access agreement or possible implementation of requisition procedures.

5.3 The nature of the site topography may result in the drainage within the site being split and a pumping station may also be required.

5.4 A foul drainage solution will be available but sewer network modelling will be required to determine capacity and points of connection.

6.0 CONCLUSION

6.1 From the perspective of flood risk, surface water management and foul drainage, there is no reason why residential development on the Wey Valley site should not proceed.

**LAND OFF
NOTTINGTON LANE,
WEYMOUTH**

**FLOOD RISK AND
DRAINAGE APPRAISAL**

**LOCATION PLAN AND
FLOOD RISK**

EXTRACT FROM ENVIRONMENT
AGENCY FLOOD RISK PLAN FOR
THE RIVER WEY CATCHMENT AT
NOTTINGTON, WEYMOUTH

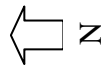
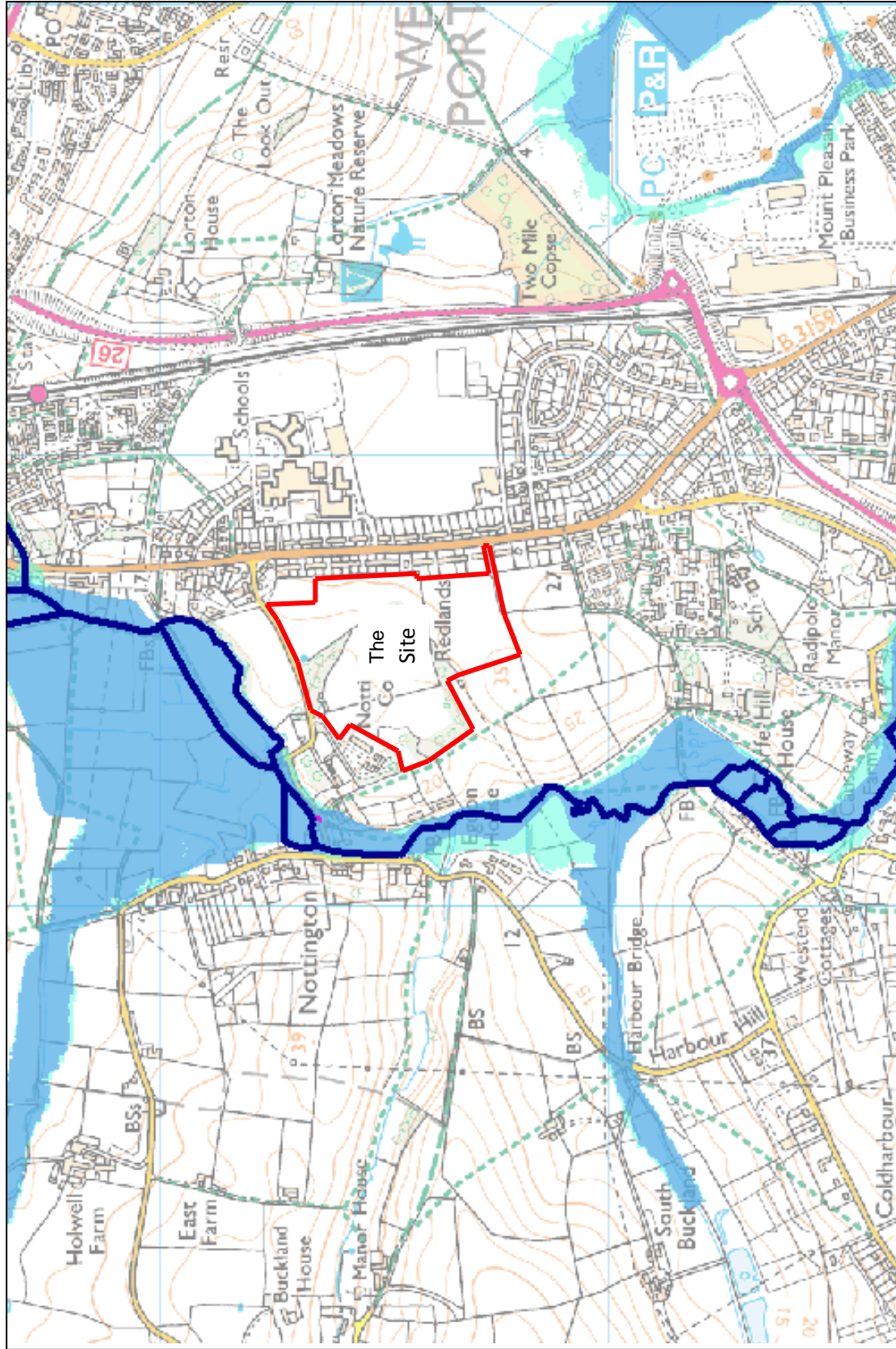


FIGURE 1

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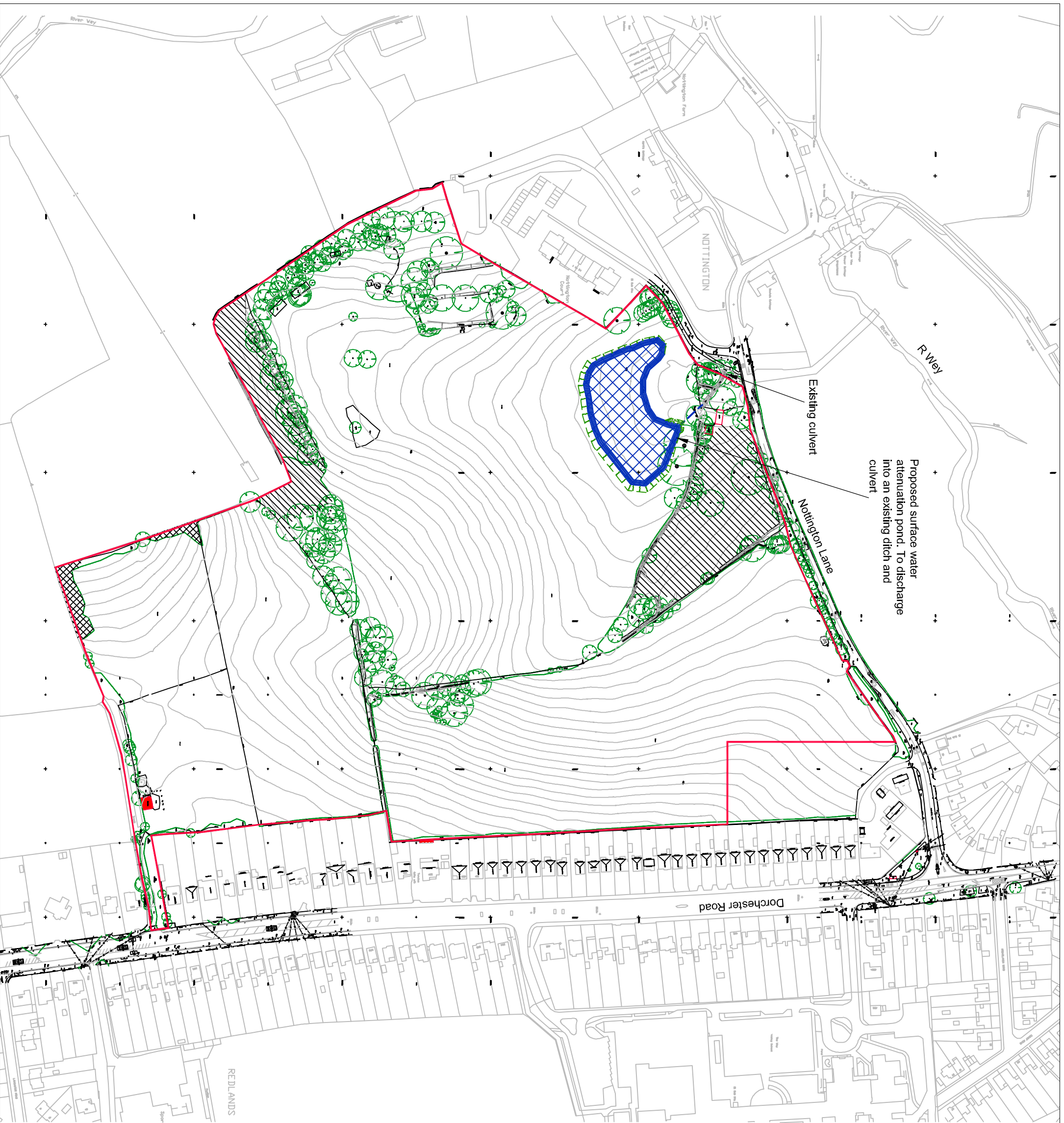




C.G. FRY & SON
B U I L D E R S

PROPOSED RESIDENTIAL
DEVELOPMENT ON LAND
OFF NOTTINGTON ROAD,
WEYMOUTH

SURFACE WATER
MANAGEMENT STRATEGY



SCALE 1:2500
Print @ A3 Size



FIGURE 2

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Appendix 1

Wessex Water Adopted Sewer Plan



WATER MAINS		Public	Private
Raw Water	—	—	—
Abandoned	---	---	---
Valve	X		
Hydrant	●		
PRV	▲		
Meter	M		
SEWERS		Public - Section 104 - Private	
Foul	—	—	—
Combined	—	—	—
Surface	—	—	—
Abandoned sewers	---	---	---
OTHER WESSEX PIPES			
Rising Mains	—	—	—
Effluent Disposal Main	—	—	—
Overflow	—	—	—
NON-WESSEX PIPES			
Private Rising Mains	—	—	—
Culverted Water Course	—	—	—
Highway Drain	—	—	—

Information in this plan is provided for identification purposes only. No warranty as to accuracy is given or implied. The precise route of pipe work may not exactly match that shown. Wessex Water does not accept liability for inaccuracies.

Sewers and lateral drains adopted by Wessex Water under the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011 are to be plotted over time and may not yet be shown.

In carrying out any works, you accept liability for the cost of any repairs to Wessex Water apparatus damaged as a result of your works. You are advised to commence excavations using hand tools only. Mechanical digging equipment should not be used until pipe work has been precisely located.

If you are considering any form of building works and pipe work is shown within the boundary of your property or a property to be purchased (or very close by) a surveyor should plot its exact position prior to commencing works or purchase. Building over or near Wessex Water's apparatus is not normally permitted.

