
Blackmore Farm, Melksham

Technical Note 10466 – TN – 001 – Proposed Drainage Statement

Introduction

This technical note has been prepared by Phoenix Design Partnership Limited on behalf of David Wilson Homes in support of their application of a full planning application for 229 dwellings and associated infrastructure including carriageways, site wide drainage and offsite highway improvements. The proposed planning will be spilt into a minimum of 2 phases with the further phase(s) delivering a further 271 units (500 total) in addition to a school, local hub and a commercial development.

Site Location

The proposed development parcel is located to the east of Melksham with a grid reference of ST92452 64170 (center of site). The development parcel is irregular in shape and bounded by Sandridge Common to the north, and green fields to the east, west and south. A farm house and associated buildings are located within the northern portion of the site which will be demolished to accommodate the new access road.

There are several drainage features running throughout the site, likely installed by the farmer over the years with several pipes installed at various crossing points.

An unnamed ditch runs along the southern boundary of the site running west to east forming a tributary to Clackers Brook.



Figure 1 – Site Location

Site Topography (Full Site)

The proposed site is divided into 8 fields which are defined by hedgerows interspersed with trees and low level scrub. The fields are currently used for agricultural purposes.

The whole site has an area of approximately 27.5Ha, however Phase 1 measures approximately 8.7Ha which includes 3 basins and pumping station required at this stage.

The site levels characteristically undulate, however typically falls from north to south from 44.5m AOD to 37.00m AOD with a typical gradient of 1:70.

Geology

The British Geological Survey (BGS) online maps indicate that the site is underlain by the Oxford Clay Formation – Mustone from the Jurassic Period.

The Soilscape website indicates that the soil is of loamy and clayey characteristics, typically seasonally wet pastures draining to streams and ditches.

Existing Drainage

Wessex Water sewer records indicate that areas to the west of the development consists of both foul and storm sewers with the latter typically draining into Clackers Brook. A 225mm foul sewer runs along Eastern Way increasing in size to 300mm as it heads west towards Snarlton Lane.

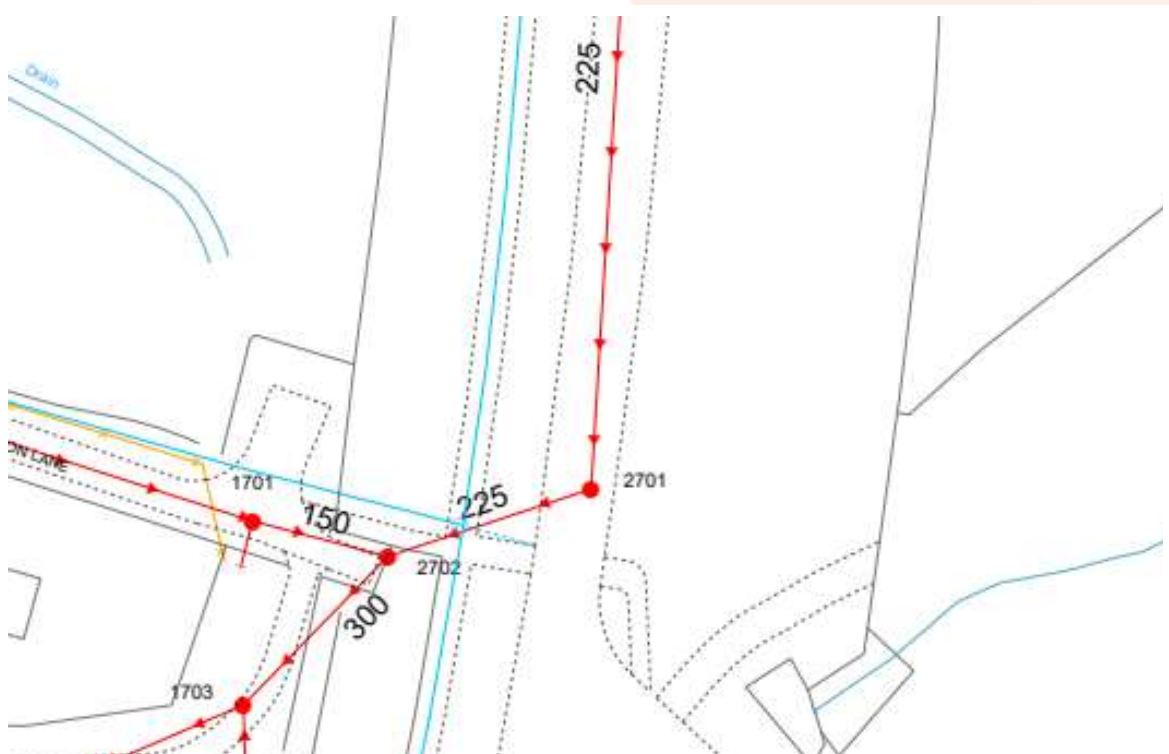


Figure 2 – Wessex Water Foul (Eastern Way)

There is a drainage ditch/ swale running along Eastern Way which drains into the Clackers Brook. As indicated previously, an unnamed tributary to Clackers Brook runs along the southern boundary of the site.



Figure 3 – Unnamed Tributary to Clackers Brook.

Development Proposals

The proposed development (phase 1) will accommodate 229 units which typically consists of the northern portion of the site; however given the topography, the basins & pumping station will be located to the south, thus will need to accommodate future phases. The basins & pumping station have been designed to accommodate the full site including the remainder of the houses, school and highways etc.

Storm Water

The proposed development will drain at the 1 in 1 year event with a 30% betterment, draining at Qbar for events greater than the 1 in 1 year event.

The 1 in 1 year flow has been calculated as 4.2l/s/Ha whilst the Qbar has been calculated as 5.4l/s/Ha. The proposed flows are as follows and are to be read in conjunction with drawing 10466 – 110 – 01 – Storm Water Catchments.

Catchment	Area (Ha)	1 in 1 (l/s)	*1 in 1 (l/s/)	Qbar
A	7.5	31.5	22.10	40.00
B	4.5	18.9	13.23	24.30
C	5.3	22.3	15.60	28.60
D#	2.1	6.3	4.40	11.35

Table 1 – Storm Discharge Rates. # Phase 2 flows

The resultant attenuation features are to accommodate the following volumes:

Catchment	Volume (m3)
A	3,107
B	1,506
C	3,391
D (phase 2)	TBC

Table 2 – Attenuation Volumes

The proposed storm drainage will drain to the unnamed tributary to the south.

Calculations for the 1 in 1 and 1:100 + 45% climate change have been provided as part of the overall planning application.

Foul Water

The site wide foul water will drain to a pumping station located to the south prior to draining into the public sewers in Eastern Way via rising main. The rising main will drain through the site allocated as commercial development, prior to a gravity sewer prior to crossing Eastern Way.

The pumping station and required storage are subject to detailed design.