LEGEND

Adoptable Drainage
- Proposed adoptable Foul manhole — F1
- Proposed adoptable Storm manhole — S1
- Existing adopted Foul manhole — ex.mh
- Existing adopted Storm manhole — ex. mh

Adoptable Highways
- Proposed highway to be cambered
- Proposed highway to have crossfall
- Proposed highway gully — G
- Proposed tactile pedestrian crossing (refer to construction drawing for detail) — T.C.

Private Drainage
- Private storm rodding eye
- 300mm dia. private inspection chamber. To be used where depth to invert is 600mm or less
- 450mm dia. private inspection chamber. To be used where depth to invert is 3000mm or less (telescopic restricted access to be used where depth exceeds 1200mm)
- 1200x750mm Inspection manhole where depth to invert is 1000 - 1500mm

OR

- 1050mm dia. Inspection manhole where depth to invert is 1000 - 1500mm Cover to have a 600mm opening
- 1200x750mm Inspection manhole where depth to invert is 1500 - 2700mm

OR

- 1200mm dia. Inspection manhole where depth to invert is 1500 - 2700mm Cover to have a 600mm opening

Note:-

All private drainage to be 100mm rigid pipe or 110mm flexible pipe unless otherwise shown
Where 5 or more properties connect to the same private storm run the pipe(s) should be upsized to 150mm dia. after the fifth property. Please refer to layout to see pipes that maybe affected.
All private drainage to have a minimum fall of 1:70
Bedding should be granular material to BS 882 : Part 2 of 10mm nominal single sized aggregate. Rigid pipes of nominal size 150mm and 160mm flexible pipes should have granular material bedding to BS 882 : Part 2 of 10mm or 14mm nominal sized aggregate or 14mm to 5mm graded aggregate.

Retaining walls and steps
- Retaining wall (edge protection required over 600mm ht) — Rwall
- Tanking
- Brickwork to be shown below DPC
- Paving flag Steps - 300mm Going 150mm Rise
- Batter - these should not exceed 1:3 adjacent to adoptable highways
- Proposed finished ground level — + 93.579

DPC levels must NOT be altered without informing the designer

Please refer to Architects layout for details of proposed fencing and walls



General Notes:-

Highways
1. All highway works to be carried out in accordance with the current local authority design guide and specification
2. All excavations below proposed and existing highways to be back filled with granular Type 1 sub base and well compacted in layers not exceeding 150mm.
3. Highway authority to be notified by the contractor prior to the commencement of works.

Adoptable Drainage
All adoptable sewer works and material to be in accordance with "Sewers for Adoption" 6th Edition, The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum and Kitemarked".

Manhole covers shall/must have a clear opening of 600mm and shall be Class 0400 to BS EN 124 with 150mm deep frames in highways.

Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.

Yorkshire Water is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.

Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued Autumn 2004 for Kitemarked cover slab opening sizes.

Sulphate resistant cement (C20-0C2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.

"Sewers must have 5 metres clearance from trees and hedges (please also refer to Figure 2.3 on page 33 **in** "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers)".

Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provide above granular bed and surround.

Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).

All adoptable sewers to be BSI Kitemark (certified to WIS 4-35-01). Adoptable sewer pipes to be laid in maximum 3m lengths unless there is a specific operational need to lay longer lengths.

Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer c1ayware channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.

The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.

Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.

Existing Services
Any existing services which may be affected by the proposed works should be located by means of a hand dig in close liaison with the statutory service authorities. The contractor shall inform the developer of any services that may affect the proposed design.
Contractor to notify statutory service authorities prior to commencement of work.

As Constructed Information
It is the contractors responsibility to provide the following as constructed drawings to the developer upon the completion of the works covered by the contract :-

1. Position/co-ordinates of all adoptable manholes.
2. Invert and cover levels of all adoptable manholes.
3. New gully positions and connections.
4. Position and depth of service ducts for water, gas, electric, BT, cable and street lighting, stating size and number of ducts.

Rev G. External works to plots 61-65 revised (foul, storm, and FFL) following an updated architects layout. JT 05 06 14
Rev F. Engineering layout updated following a revised architects layout. DWH 16 08 12
Rev E. F13 & F14 repositioned following site feed back relating to newly laid water main within carriageway. 29 10 10 AL
Rev D. Road 5 now crossfall. Demolished property removed, plots 68-78 altered, aquacel overflows removed. Private drainage to plots 105 - 108 revised to suit house type revision. 02 07 10 AL
Rev C. Drainage network on Road 4 changed. 23 06 10 PS
Rev B. Flow control specification revised. 16 06 10 AL
Rev A Drainage scheme redrawn following discussion wth Highways. 25 05 10 AL

Drawing Status
CONSTRUCTION

Title
Keepmoat Homes Thurnscoe Ph1
ENGINEERING LAYOUT

scale	Date
1:500@A1	March 2010
Drawn by	e-mail
AL	mark.paylor@queensberrydesign.co.uk

Drawing no.	Revision	Client Contract no.
QD308-03-01	G	-

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