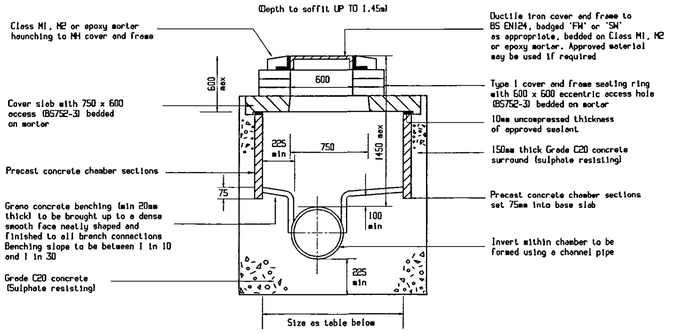
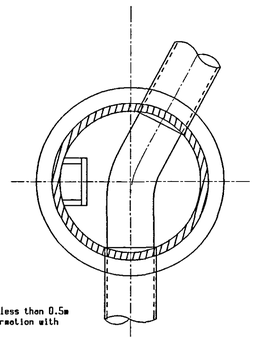
TYPICAL MANHOLE DETAIL TYPE X

(Depth to soffit UP TO 1.45m)





All pipes entering or leaving manholes shall have a flexible joint within 600mm of the inside face of the manhole. The next pipe shall be a short 'Rocker Pipe' 600mm long

SHAFT DIAMETERS

Dia of largest pipe in MH (mm)	Int. dia of MH (mm)
up to 300	1200

Note
If pipe diameter exceeds 300mm use manhole Type B or C

NOTE: -

TRENCH BACKFILL

1. Where the soffit of the Pipe is less than 0.5m below formation - Backfill to formation with Class E concrete.
2. Where the soffit of the Pipe is between 0.5m & 1.0m below formation - Backfill to formation with Type 1 Sub-base (allow for granular bedding material 150mm above crown of Pipe).
3. Where the soffit of the Pipe is greater than 1.0m below formation - backfill with suitable fill.

MANHOLE SCHEDULE FOR MINIMUM DIAMETER

Diameter of largest pipe	Diameter of chamber	Diameter of largest pipe	Diameter of chamber	Diameter of largest pipe	Diameter of chamber
150	1200	450	1500	750	1800
225	1200	525	1500	825	1800
300	1200	600	1500	900 - 975	1800
375	1500	675	1500	> 975	2400

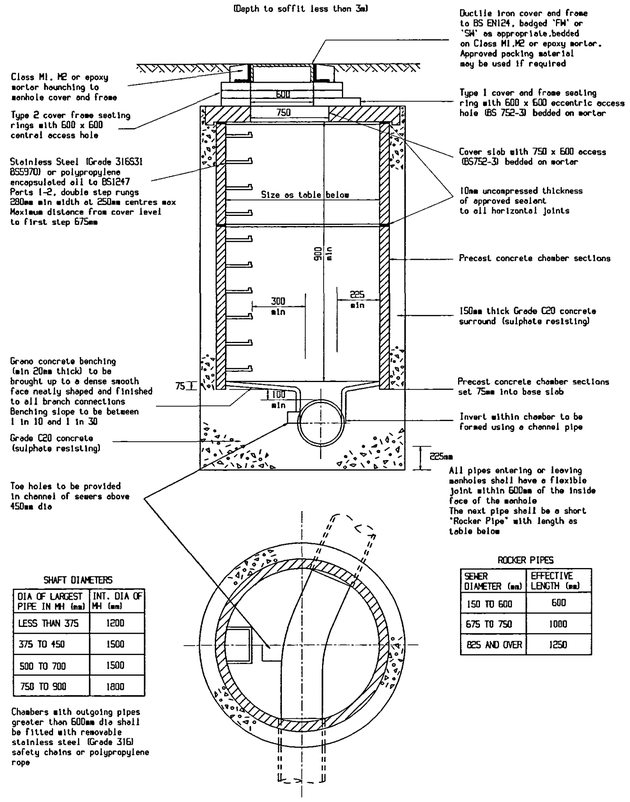
CLAUSE 4.6.6 PIPES AND JOINTS ADJACENT TO STRUCTURES

1. A flexible joint shall be provided as close as is feasible to the outside face of any structure into which a pipe is built, compatible with the satisfactory completion and subsequent movement of the joint.
2. The length of the next pipe (rocker pipe) away from the structure shall be shown as in the Table below.

Nominal pipe dia. (mm)	Rocker Pipe Effective Length (m)
150 - 600	0.6
675 - 750	1.0
750 and over	1.25

TYPICAL MANHOLE DETAIL TYPE B

(Depth to soffit less than 3m)



SHAFT DIAMETERS

DIA OF LARGEST PIPE IN MH (mm)	INT. DIA OF MH (mm)
LESS THAN 375	1200
375 TO 450	1500
500 TO 700	1500
750 TO 900	1800

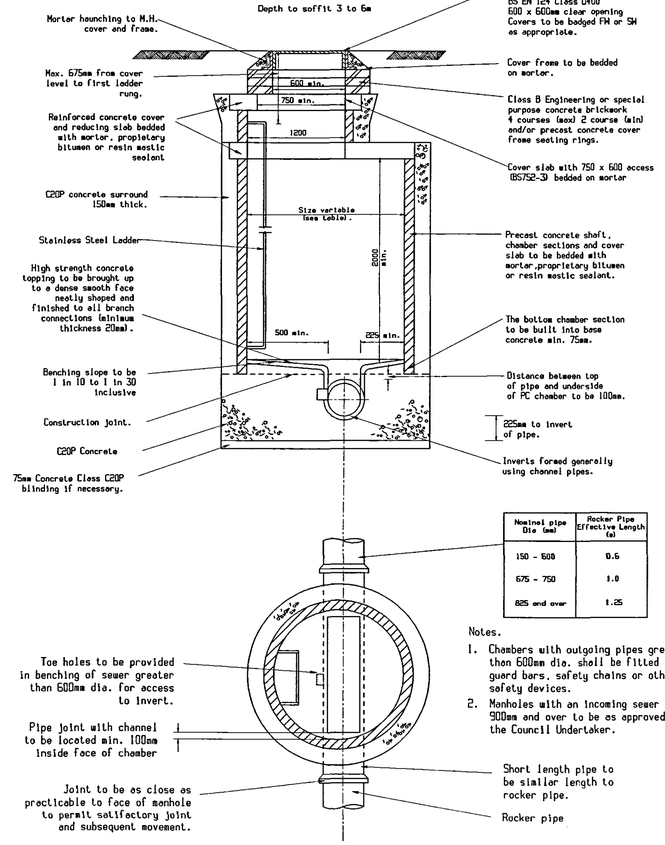
Chambers with outgoing pipes greater than 600mm dia shall be fitted with removable stainless steel (Grade 316) safety chains or polypropylene rope

ROCKER PIPES

SEWER DIAMETER (mm)	EFFECTIVE LENGTH (mm)
150 TO 600	600
675 TO 750	1000
825 AND OVER	1250

TYPICAL MANHOLE DETAIL TYPE A

Depth to soffit 3 to 6m



Nominal pipe Dia (mm)	Rocker Pipe Effective Length (m)
150 - 600	0.6
675 - 750	1.0
825 and over	1.25

Notes.

1. Chambers with outgoing pipes greater than 600mm dia. shall be fitted with guard bars, safety chains or other safety devices.
2. Manholes with an incoming sewer of 900mm and over to be as approved by the Council Undertaker.

SPECIFICATION CLAUSES TAKEN FROM "SEWERS FOR ADOPTION" 5TH EDITION.

CLAUSE 4.2.30 MANHOLE COVERS AND FRAMES

1. Manhole covers and frames shall comply with the relevant provisions of BS EN 124 and they shall be of a non-rocking design which does not rely on the use of cushion inserts.
2. REFER TO MANHOLE DETAIL FOR COVER SPECIFICATION AND TYPE
3. Minimum frame depths for NRSHA road categories I-IV shall be as follows:

NRSHA Road Category	Description	Minimum Frame Depth (mm)
I	Trunk roads & dual carriageways	150
II	All other A roads	150
III	Bus services	150
IV	All other roads except Residential cul-de-secs	150
	Residential cul-de-secs	100

Class B 125 shall be used in footways,pedestrian areas & compareable locations.

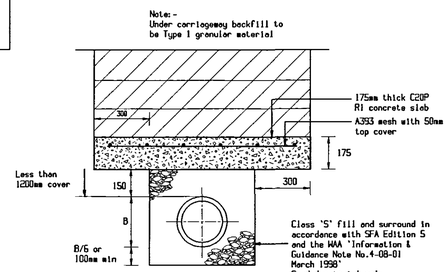
4. All manhole covers shall be the non-ventilating type and shall have closed keyways.

NOTES:-

1. The centre of any manhole is not necessarily co-incidental with the centre line of the main pipe.
2. Positioning of the manhole covers and step irons to be directed on site.
3. Construction joints in the concrete surround must not coincide with the joints in the precast concrete chamber rings.
4. The benching is to be formed to direct flow from side connections into the main flow.
5. Sulphate resisting cement is required in all concrete products used for Section 104 works on the site.
6. All lateral crossings to main sewers shall be to the bedding and backfill standards described on the drawings, and protected as necessary. The high level sewer shall not be undermined by the low level lateral and connection. All end caps to laterals shall be painted 'FW' or 'SW' as appropriate.

All adoptable drainage shall conform to the design and construction guide for developers, Sewers for Adoption 5th Edition, the Combined Addendum to that document both published by the WRc plc and Anglian Water's Adopting your Sewers-additions/deletions to Sewers for Adoption 5th Edition.

CONCRETE PIPE PROTECTION

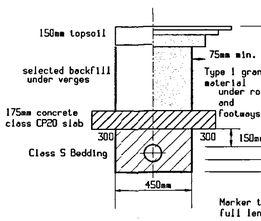


CARRIAGEWAY - Less than 1200mm cover
OPEN SPACE - Less than 900mm cover

RISING MAIN TRENCH DETAIL

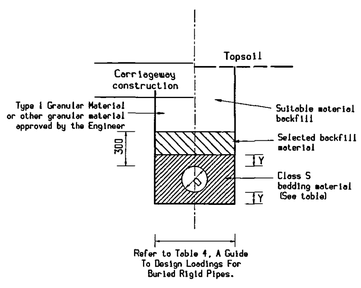
NOTES FOR RISING MAIN

1. For details of rising main plan and longitudinal sections, refer to drawings E1081/13, E1081/20
2. Rising main to be Black MDPE,Rating SDR11 (10Bar.nom.100mm ID) butt welded and push fast jointing systems with VJ couplings to other pipework.
3. Connection to gravity discharge manhole is to be made using a short length of rocker pipe and VJ coupling,or as directed by AWS on site.Benching to be reformed as necessary.
4. All reinstatement is to be to the satisfaction of the relevant Authority (other Statutory Authority/Highway Authority or Private Landowner as appropriate).
5. The Contractor must contact all Statutory Authorities in order to locate their plant/apparatus on site in order that a smooth route may be established for the rising main.The route indicated on other plans is indicative only,and may need to be adjusted as necessary on site.
6. Any significant departure from line and level as shown on other Drawings should be brought to the attention of the Engineer immediately.
7. Testing of MDPE pipe work shall be carried out in accordance with Provisional Pressure Test Type 2 detailed in Section 8 of the Manual for MDPE systems for Water Supply,published by WRc. The test pressure shall be 15 bar MDPE pipe work.

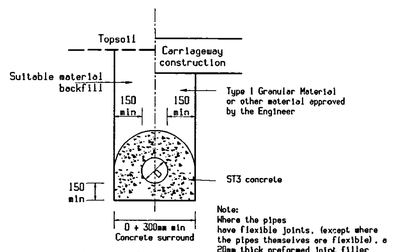


NOTE
Marker Tape - a green tape marked "Sewage Pumping Main Below" (or similar) and containing a tracer wire must be laid approximately 300 mm above the crown of the Rising Main and effectively bonded to any on-line valves and station pipework. ('Plyago HRD' by Robert Frazer Industrial, Ashville Way, Cambridge Road Trading Estate, Whetstone, Leicester,LE8 3NU or approved equal)

PIPE BEDDING DETAILS

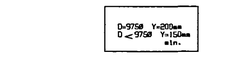


Class S Bedding
(Fa. - 2.2)

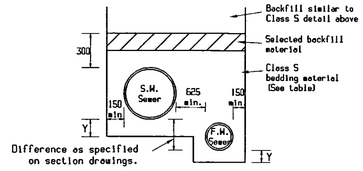


Concrete Bed and Surround
Gully Connections Only

Note:
Where the pipes have flexible joints, (except where the pipes themselves are flexible), a 20mm thick preformed joint filler shall be used at each pipe joint, and shall extend through the full thickness of any concrete in contact.



Nominal size DN	Pipe Bedding Requirement as
150	14 to 5 graded
225 to 525	14 to 5 graded or 20 to 5 graded
600 and above	crushed rock or 14 to 5 graded or 20 to 5 graded or 40 to 5 graded



Dual Trench Detail

Rev. No.	REVISION	Date	Drawn By	Checked By
A	1350Ø chamber rings removed to AWS specification	31.10.05	NJB	
B	Type A manhole cover slab and type X manhole maximum diameter amended to Anglian Water's requirements.	16.1.06	NJB	HGC

Written dimensions to be taken. Do not scale off the drawing.
Any discrepancies, written or scaled, should be brought to the attention of the engineer immediately.
This drawing to be read in conjunction with the relevant Bills of Quantities and Local Authority Specification.
CDM NOTE: The design has been undertaken as far as possible to avoid risks to health and safety or to reduce and control the effects of any unavoidable risks.
All relevant information identifying the unavoidable risks has been passed to the planning supervisor for inclusion in the Health & Safety plan.
The Health & Safety plan will be issued by the planning supervisor with these drawings.

WORMALD, BURROWS PARTNERSHIP
Civil Engineering Consultants
12a & 14a Hitchin Street, Biggleswade, Beds SG18 8AX, U.K.
Tel 01767 317244
Fax 315434

SHDC Planning & Development 27 JUL 2007 Ref: to030/07 DETAILED PLAN

Project
Development at Wygate South, Spalding, Lincolnshire

Drawing Discription
Standard Drainage Construction Details

Client
Allison Homes Eastern Ltd
Holland Place
Wordentree Park
Pinchbeck
Spalding
Lincs, PE11 3ZN

Client Drawing Number
A027/205/01

Drawn By NJB
Date 20.9.05

Scale N.T.S.

Engineering Drawing Number
E1081/22/B

Checked By HGC
Date 20.9.05

EAQA REGISTERED COMPANY ISO 9001:1994 CERT NO.00 UKAS QUALITY MANAGEMENT 002