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NOTES:

ALL SEWERS TO BE CONSTRUCTED IN ACCORDANCE WITH THE PROCEDURES AND SPECIFICATIONS OF SEWERS FOR ADOPTION 6TH EDITION (MARCH 2006).

STORM BRANCH CONNECTIONS TO BE 150mm Ø UNLESS OTHERWISE STATED.
GULLY CONNECTIONS TO BE 150mm Dia. CLAY PIPES EXTRA STRENGTH LAID NO FLATTER THAN 1:150.
FOUL BRANCH CONNECTIONS TO BE 150mm Dia. LAID NO FLATTER THAN 1:60 WHERE SERVING 1/4 PLOTS OR LESS AND 150mm Dia. LAID NO FLATTER THAN 1:150 WHERE SERVING 11 PLOTS OR MORE (UNLESS OTHERWISE STATED).

ALL SEWERS AND LATERAL DRAINS WITHIN DOMESTIC CURTILAGE OF DIAMETER 100mm AND 150mm TO BE EITHER CLAY PIPES EXTRA STRENGTH OR PVC-U TO BS EN 1401-1:1996 & BS 8000-14:2000.
ALL BRANCH CONNECTIONS WITHIN ADOPTED HIGHWAY TO BE CLAY PIPES EXTRA STRENGTH.

ALL PIPEWORK TO BE LAID ABOVE TO SUITE UNLESS OTHERWISE STATED.
ALL PIPES 100mmØ & GREATER WITH COVER EXCEEDING 1.2m TO BE STRENGTH CLASS 120 TO BS1911-1:2002 WITH CLASS S BEDDING (20mm-5mm GRAVEL RID AND SURROUND).
ALL CLAY PIPES 150mmØ & 225mmØ BETWEEN TO BE EXTRA STRENGTH WITH CLASS S BEDDING (14mm - 5mm GRAVEL RID AND SURROUND).
ALL PIPES 300mmØ & GREATER WITH COVER LESS THAN 1.2m TO BE STRENGTH CLASS 120 TO BS1911-1:2002 WITH CONCRETE PROTECTION.
ALL CLAY PIPES 150mmØ & 225mmØ BETWEEN TO BE EXTRA STRENGTH WITH CONCRETE PROTECTION.

PRECAST CONCRETE PRODUCTS AND IN SITU CONCRETE TO CONTAIN A MINIMUM CLASS 3 RC.
STRUCTURAL CONCRETE TO BE IN ACCORDANCE WITH BS 5328 AND NOT TO BE LESS THAN GRADE 35(C) WHEN REINFORCED AND GEN3 IN ALL OTHER SITUATIONS.
CAST CONCRETE SHALL BE FINISHED TO PRODUCE A "FAIR" SURFACE WHERE EXPOSED AND SHALL HAVE A "SMOOTH" FINISH IN ALL OTHER SITUATIONS. (UNLESS AS DEFINED IN CIVIL ENGINEERING SPECIFICATION FOR THE WATER INDUSTRY - 5TH EDITION).
STEEL WORK SHALL BE IN ACCORDANCE WITH BS4483.

ALL MANHOLE COVERS TO BE 600x600 CLEAR OPENING IN ACCORDANCE WITH B.S. EN124 CLASS D400 AND EMBOSSED FW OR SW AS APPROPRIATE.

THE SPECIFICATION IN ALL RESPECTS SHALL BE IN ACCORDANCE WITH THE CURRENT LINCOLNSHIRE DESIGN GUIDE FOR RESIDENTIAL AREAS AND DEVELOPMENT ROAD SPECIFICATION AND CONSTRUCTION PUBLICATIONS IN FORCE IN THE COUNTY AT THE TIME OF CONSTRUCTION.

ALL GULLIES WITHIN THE HIGHWAY SHALL CONFORM TO BS EN124:GRP 4 (CLASS D400). ALL GULLIES SHALL BE HINGED BUT NON REMOVABLE AND SHALL HAVE A NOMINAL WIDTH OF 450mm WITH A MINIMUM AREA OF WATERWAY OF 900cm² FOR CARRIAGEWAYS AND A CLEAR OPENING OF AT LEAST 300mm x 300mm FOR FOOTWAYS. THE UPPER SURFACE OF GULLY GRATINGS SHALL BE FLAT AND SLOTS IN GRATINGS OR BETWEEN GRATINGS AND FRAMES SHALL NOT BE ORIENTATED PARALLEL TO THE DIRECTION OF TRAFFIC EXCEPT WHERE THE SLOTS ARE LESS THAN 150mm LONG OR LESS THAN 20mm WIDE. WHERE GRADIENTS ARE STEEPER THAN 1:10, STORM PATTERN GRIDS SHALL BE PROVIDED.

ALL SIGNS AND LINE MARKINGS ARE TO BE AGREED WITH THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION.

BT CHAMBERS AND ANGLIAN WATER METERS ARE NOT TO BE LOCATED WITHIN PEDESTRIAN CROSSING POINTS OR VEHICLE ACCESSES.

THE MINIMUM LONGITUDINAL FALL FOR HIGHWAYS, WITHOUT CHANNEL BLOCKS SHALL BE 1 in 150, AND WITH CHANNEL BLOCKS 1 in 250 (closer 10.1) IN ADDITION, ENSURE THAT THE FIRST SECTION OF ANY SIDE ROAD FALLS AWAY FROM THE ROAD TO WHICH IT IS CONNECTING, IF GENERAL TOPOGRAPHY REQUIRES IT TO RISE, THIS CHANGE OF DIRECTION SHOULD TAKE PLACE AFTER THE FIRST SET OF GULLIES. THIS IS TO AVOID A "FALSE CHANNEL" WITH ASSOCIATED DRAINAGE PROBLEMS IS NOT CREATED IN THE BELLMOUTH OF JUNCTIONS. NO PRIVATE SURFACE WATER SHALL DISCHARGE INTO THE ADOPTABLE HIGHWAYS.

RECONSTRUCTION OF EXISTING CARRIAGEWAY AND FOOTWAYS THAT ARE AFFECTED BY THESE DEVELOPMENT WORKS ARE TO BE SPECIFIED AND AGREED BY THE SENIOR HIGHWAYS OFFICER PRIOR TO CONSTRUCTION.

LCC CDM (Construction Design and Management Regulations 2007) notes:

1. If you do not fully understand the risks involved during the construction of the items indicated on this drawing ask your manager, health & safety advisor or a member of the design team before proceeding.
2. Existing services may exist on-site. The contractor shall liaise with all relevant service companies and arrange for all services to be located, marked and protected.
3. Drainage works may involve deep excavations and/or heavy plant/materials.
4. The contractor shall read and understand the Ground Investigation Report and be aware of any potential variations in soil conditions over the site.
5. The potential for danger to the general public and site personnel exists from works in the public highway. The contractor shall liaise with the highway authority (Lincolnshire County Council) and ensure safe method of working is maintained at all times.
6. Existing drainage pipes may be asbestos cement or fibre reinforced pipes, or concrete pipes containing asbestos fibre. Contractor to ensure competent staff adequately trained are engaged in the works, and disposal of any affected material is undertaken in line with current legislation and good practice guidelines.
7. The contractor is to be aware that overhead cables may cross the site.
8. The contractor is to be aware that works may involve working adjacent to or in existing watercourses.
9. Works may involve working in close proximity to an existing water main. The contractor is to ensure that this is fully located and protected during the works.

Domestic Curtilage Drainage Notes

Plot 65 DENOTES PLOT NUMBER
3.600 DENOTES SUGGESTED FINISHED FLOOR LEVEL
(2.54) DENOTES EXISTING GROUND LEVEL

- 150mm Ø SURFACE WATER SEWER (S104). (min 1:150 in domestic curtilage, min 1m/s or/s on main lines).
- 100mm Ø (min 1:60) SURFACE WATER HOUSE DRAIN (PRIVATE).
- 150mm Ø (min 1:150) (11+ PLOTS) FOUL WATER SEWER (S104).
- 100mm Ø (min 1:60) 150mm Ø (min 1:150) FOUL WATER HOUSE DRAIN (PRIVATE).

- RAINWATER PIPE ADAPTOR
- SVP ADAPTOR
- WASH BASIN / BATH / SHOWER ADAPTOR
- WC ADAPTOR
- BACK INLET GULLY
- RODDING EYE
- YARD GULLY FITTED WITH 100mm OUTLET
- POLYPROPYLENE ACCESS CHAMBER (PRIVATE) - STORM
- POLYPROPYLENE 600MM ACCESS CHAMBER (PRIVATE) - STORM
- POLYPROPYLENE ACCESS CHAMBER (PRIVATE) - FOUL
- POLYPROPYLENE 600MM ACCESS CHAMBER (PRIVATE) - FOUL

POLYPROPYLENE ACCESS CHAMBERS (TYPE 1) TO BE USED UP TO 2.0m DEEP.
POLYPROPYLENE ACCESS CHAMBERS (TYPE 4) TO BE USED UP TO 2.0m DEEP SERVING MAX 5 PLOTS.
ALL CHAMBERS ON SEWERS AND LATERALS WITHIN GARDEN AREAS, FOOTWAYS AND DRIVEWAYS TO BE FITTED WITH BS EN 124 GRADE B125 COVERS.
CHAMBERS WITHIN PARKING COURTYARDS TO BE FITTED WITH BS EN 124 GRADE D 400 COVERS.
CHAMBERS WITHIN FOOTWAYS, DRIVEWAYS AND PARKING COURTYARDS TO BE PROVIDED WITH 510mm DEEP C30 CONCRETE COLLAR.
WHERE CHAMBERS ARE WITHIN 1.2m OF ANY BUILDING AND THE INVERT LEVEL OF THE CHAMBER IS MORE THAN 600mm DEEP ENSURE BUILDING FOUNDATION IS LOCALLY DEEPENED SO THAT BOTTOM OF FOUNDATION IS 150mm BELOW CHAMBER INVERT LEVEL.
DOMESTIC DRAINAGE TO BE UPVC OR CLAY.
100mm Ø DOMESTIC DRAINAGE (not S104) TO BE LAID NO FLATTER THAN 1:60 GRADIENT.
150mm Ø DOMESTIC DRAINAGE (not S104) TO BE LAID NO FLATTER THAN 1:150 GRADIENT.

SFA 6

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY. CHECK ON SITE AND ALL DISCREPANCIES TO BE REPORTED TO HALL infrastructure DESIGN Ltd.

AMENDMENTS:

REF.	DESCRIPTION.	DATE.	BY.
A	domestic curtilage drainage completed.	26.03.15	CWH
B	Amended following LCC comments 07.12.15	09.12.15	CWH
C	Amended following WWY comments 10.12.15	11.12.15	CWH
D	Amended following LCC comments 15.12.15	29.12.15	CWH
E	Amended following WWY comments 05.01.16	05.01.16	CWH
F	Mill Road foul sewer replacement shown.	04.04.16	CWH
G	Wet well sump amended to suit TT Pumps drawing.	02.06.16	CWH
H	Mill Road as built foul sewer details added.	06.12.16	CWH

CLIENT:
Cyden Homes Ltd

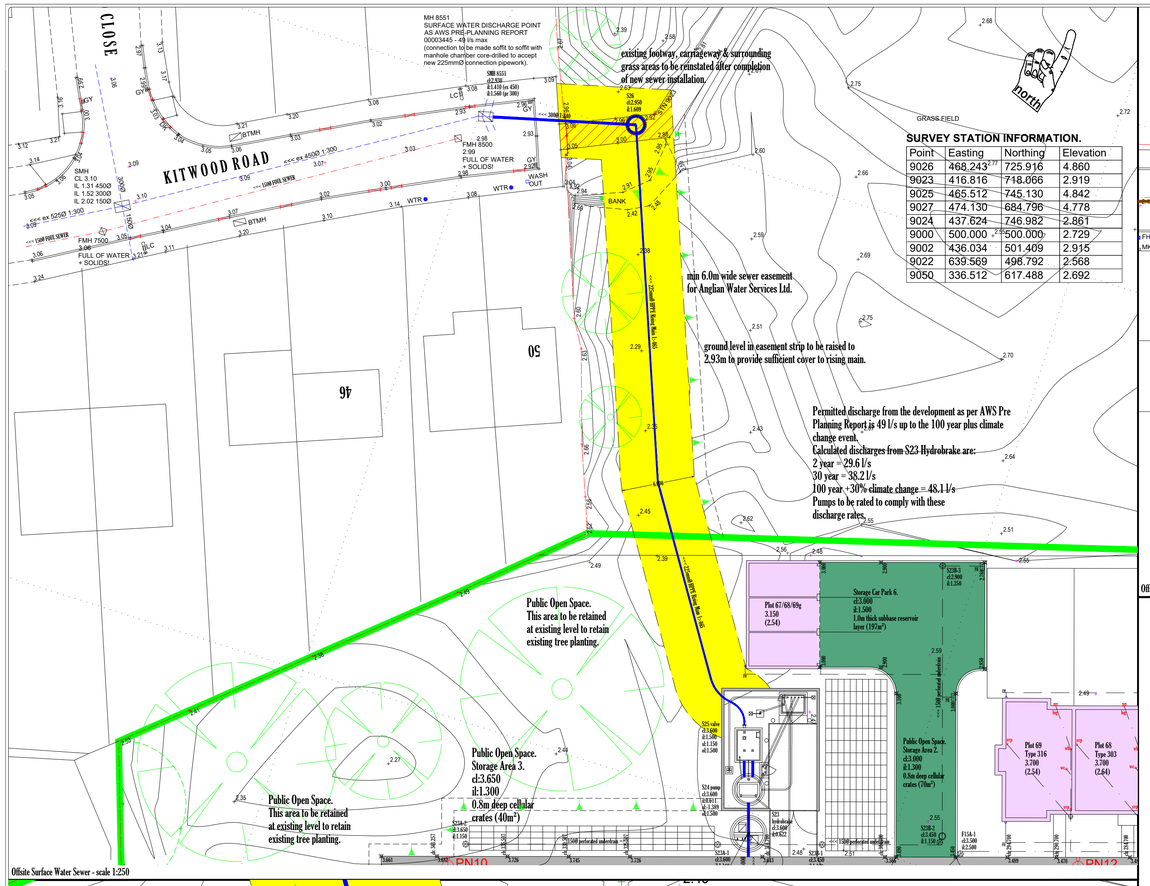
PROJECT:
Mill Road
Boston

TITLE:
Hydrobrake Manhole Details
Pumping Station Details
Offsite Surface Water and Foul Sewers

SCALE:	DATE:	SIZE:
as stated	March 2015	A1

DRAWING No:	DRAWN BY:	CHECKED BY:
1507/04-H	AHG	AHG

HALL
-infrastructure-
DESIGN
9 St Mary's Park, Louth,
Lincolnshire, LN11 0EF
Tel: 01507 601475 Mob: 07891 503179
email: hall.design@btinternet.com
website: www.hall-infrastructure-design.co.uk


MH 8551
SURFACE WATER DISCHARGE POINT AS AWS PRE-PLANNING REPORT 00003445 - 49 l/s max
(connection to be made soffit to soffit with manhole chamber core-drilled to accept new 225mmØ connection pipework).
KITWOOD ROAD
CLOSE
existing footway, carriageway & surrounding grass areas to be reinstated after completion of new sewer installation.
min 6.0m wide sewer easement for Anglian Water Services Ltd.
ground level in easement strip to be raised to 2.93m to provide sufficient cover to rising main.
Permitted discharge from the development as per AWS Pre Planning Report as 49 l/s up to the 100 year plus climate change event.
Calculated discharges from S23 Hydrobrake are:
2 year = 29.6 l/s
30 year = 38.2 l/s
100 year +30% climate change = 48.1 l/s
Pumps to be rated to comply with these discharge rates.
Public Open Space.
This area to be retained at existing level to retain existing tree planting.
Public Open Space.
Storage Area 3.
cl:3.650
il:1.300
0.8m deep cellular crates (40m²)
Public Open Space.
This area to be retained at existing level to retain existing tree planting.
Storage Car Park 6.
cl:3.000
il:1.500
1.0m thick subbase reservoir layer (197m²)
Public Open Space.
Storage Area 2.
cl:3.000
il:1.300
0.8m deep cellular crates (70m²)
Plot 67/68/69g
3.150
(2.54)
Plot 69 Type 316 3.180 (2.54)
Plot 68 Type 303 3.180 (2.64)
SMH CL 3.10 IL 1.31 4500 IL 1.52 3000 IL 2.02 1500
FMH 7500
FULL OF WATER + SOLIDS!
FMH 8500
FULL OF WATER + SOLIDS!
SMH 8551 cl.3.530 il.1.610 (or 450) il.1.560 (or 300)
S26 cl.2.950 il.1.650
S27 cl.3.000 il.1.700
S28 cl.3.000 il.1.750
S28A cl.3.000 il.1.800
S28B cl.3.000 il.1.850
S29 cl.3.000 il.1.900
S29A cl.3.000 il.1.950
S29B cl.3.000 il.2.000
S29C cl.3.000 il.2.050
S29D cl.3.000 il.2.100
S29E cl.3.000 il.2.150
S29F cl.3.000 il.2.200
S29G cl.3.000 il.2.250
S29H cl.3.000 il.2.300
S29J cl.3.000 il.2.350
S29K cl.3.000 il.2.400
S29L cl.3.000 il.2.450
S29M cl.3.000 il.2.500
S29N cl.3.000 il.2.550
S29P cl.3.000 il.2.600
S29Q cl.3.000 il.2.650
S29R cl.3.000 il.2.700
S29S cl.3.000 il.2.750
S29T cl.3.000 il.2.800
S29U cl.3.000 il.2.850
S29V cl.3.000 il.2.900
S29W cl.3.000 il.2.950
S29X cl.3.000 il.3.000
S29Y cl.3.000 il.3.050
S29Z cl.3.000 il.3.100
S30 cl.3.000 il.3.150
S31 cl.3.000 il.3.200
S32 cl.3.000 il.3.250
S33 cl.3.000 il.3.300
S34 cl.3.000 il.3.350
S35 cl.3.000 il.3.400
S36 cl.3.000 il.3.450
S37 cl.3.000 il.3.500
S38 cl.3.000 il.3.550
S39 cl.3.000 il.3.600
S40 cl.3.000 il.3.650
S41 cl.3.000 il.3.700
S42 cl.3.000