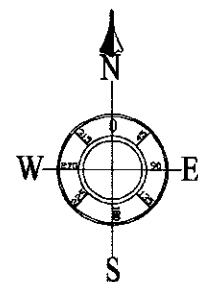


PRELIMINARY

DUE TO DEPTH OF THE OFF SITE
FOUL SEWER THE POSSIBILITY OF
CLASHES WITH EXISTING SERVICES MAY
OCCUR
REFA WOULD ADVISE THE CLIENT TO
EMPLOY A SUITABLY EXPERIENCED
COMPANY TO UNDERTAKE A TRIAL
HOLE SURVEY AT THE POINT WHERE
PROPOSED SEWER IS BELOW EXISTING
ROAD AND FOOTPATH TO ASCERTAIN
THE EXISTENCE AND PROXIMITY OF
ANY SERVICES AND ADVISE REFA OF
ANY POTENTIAL CLASHES TO ASCERTAIN
IF DESIGN CHANGES CAN BE MADE
REFA WILL NOT BE HELD RESPONSIBLE
FOR ANY ADOPTIVE WORKS IF THIS
PROCEDURE IS NOT FOLLOWED.



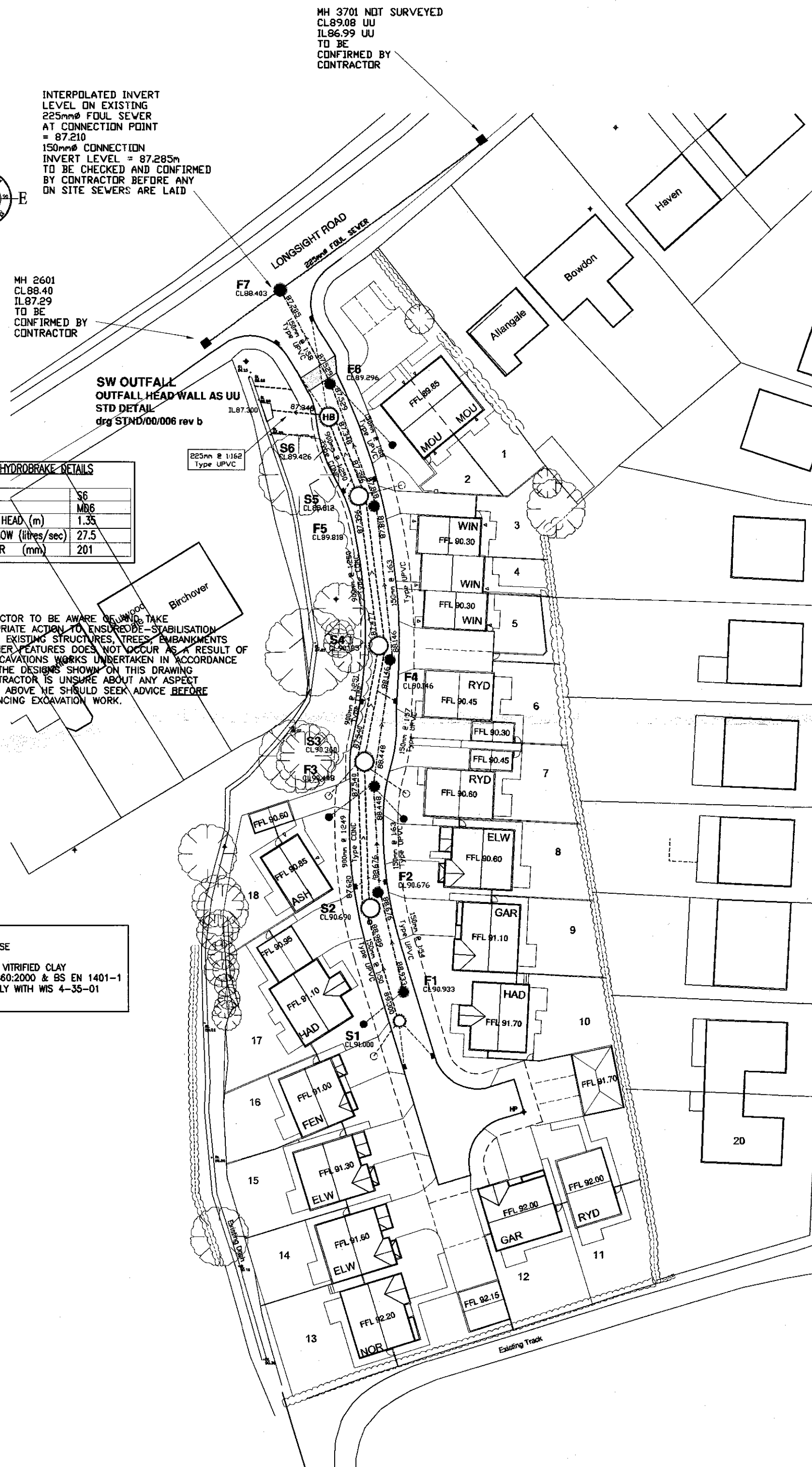
ALL EXISTING SERVICES TO BE LOCATED
AT COMMENCEMENT IN ACCORDANCE WITH
UNDERTAKERS REQUIREMENTS
AND PROTECTED ACCORDINGLY DURING
THE WORKS

HYDROGRAPHIC DETAILS	
MH. No.	S6
TYPE	M06
DESIGN HEAD (m)	1.35
MAX. FLOW (litres/sec)	27.5
DIAMETER (mm)	201

CONTRACTOR TO BE AWARE BEFORE TAKE
APPROPRIATE ACTION TO ENSURE STABILISATION
OF ANY EXISTING STRUCTURES, TREES, EMBANKMENTS
OR OTHER FEATURES DOES NOT OCCUR AS A RESULT OF
ANY EXCAVATIONS WORKS UNDERTAKEN IN ACCORDANCE
WITH THE DESIGNER SHOWN ON THIS DRAWING
IF CONTRACTOR IS UNSURE ABOUT ANY ASPECT
OF THE ABOVE WE SHOULD SEEK ADVICE BEFORE
COMMENCING EXCAVATION WORK.

ALL PIPES TO HAVE CLASS "S" BED
AND SURROUNDING UNLESS SHOWN OTHERWISE
ALL CONCRETE PIPES TO BE CLASS 120
ALL CLAY PIPES TO BE EXTRA STRENGTH VITRIFIED CLAY
ALL UPVC PIPES TO COMPLY WITH BS 4660:2000 & BS EN 1401-1
STRUCTURED WALL UPVC PIPES TO COMPLY WITH WIS 4-35-01
MAX. PIPE LENGTH TO BE 3.0m

INTERPOLATED INVERT
LEVEL ON EXISTING
225mm Ø FOUL SEWER
AT CONNECTION POINT
= 87.210
150mm Ø CONNECTION
INVERT LEVEL = 87.285m
TO BE CHECKED AND CONFIRMED
BY CONTRACTOR BEFORE ANY
ON SITE SEWERS ARE LAID



SURFACE WATER FLOWS TO BE RESTRICTED
TO EXISTING BROWNFIELD & GREENFIELD
FLOW RATES AS FOLLOWS :-

GREENFIELD = 1.7 LITRES/SECOND (0.04m³/s) USING
ICOP SUBS METHODOLOGY (0.395 ha)

BROWNFIELD = 25.8 LITRES/SECOND BASED ON 50mm
RAINFALL INTENSITY (0.186 ha)

THUS TOTAL FLOW TO BE RESTRICTED TO 27.5
LITRES/SECOND WITH ON SITE ATTENUATION FOR
STORMS UP TO THE 1 IN 100 YEAR + 30% CC EVENT

TO CATER FOR ANY DEVIATIONS IN THE
AS CONSTRUCTED ROAD / FOOTPATH LEVELS
IN RELATION TO THE DESIGN LEVELS
THE PROPOSED FLOOR LEVELS SHOWN
MUST BE CHECKED ON SITE BY THE SITE AGENT
OR ENGINEER IN RELATION TO AS BUILT ROAD
LEVELS TO ENSURE COMPLIANCE WITH PART M
OF THE BUILDING REGULATIONS

FOUNDATIONS TO BE DESIGNED / CONSTRUCTED
TO TAKE INTO ACCOUNT THE PROXIMITY AND
DEPTH OF ADJACENT SEWERS AND DRAINS IN
ACCORDANCE WITH SFA 7TH EDITION PART 8

OUTSIDE OF NEW SEWERS
TO BE LOCATED 1.0m MINIMUM
FROM KERBLINES
OUTSIDE OF MANHOLE CHAMBERS
TO BE LOCATED 0.5m MINIMUM
FROM KERBLINES

DO NOT SCALE from this drawing

All dimensions must be verified on the site before setting out :
commencing work, with any discrepancies reported to REFA

SECTION 104 & 38 NOTES

- All adoptable drainage works have been designed and are to be constructed in accordance with "Sewers for Adoption, 7th Edition", and UU Supplemental Guidelines
- All clay pipe work shall be Extra Strength Clayware to B.S. EN 285:1991 Part 1
- All precast concrete pipework shall be to the class stated on the drawings in accordance with BS EN 1916:2002. All manholes and chambers shall be to BS EN 1917:2002
- The Contractor may elect to use reinforced PVC pipes as covered by BS 4660:2000 & BS EN 1401-1. Structured wall upvc pipes to comply with wis 4-35-01 up to and including 300mm. (By prior agreement with adopting authority) MAX. PIPE LENGTH TO BE 3.0m
- All levels relate to an Ordnance Datum.
- This drawing is to be read in conjunction with all other relevant drawings.
- House drainage connections to sewers must be 150mm Ø and unless otherwise stated laid to the dragout invert level shown.
- Levels given on drag out chambers are incoming pipe levels.
- House drainage runs to be kept within the curtilage of the plot they serve wherever possible.
- The Contractor shall be responsible for ensuring that any existing invert levels indicated on drawings are correct before work commences.
- The Contractor should satisfy himself as to the position and depth of any existing Statutory Undertakers plant which could effect the works before the works are commenced.
- Road gully connections are to be 150mm Ø connecting either directly to manholes shown, or to sewer runs using pre-formed junctions.
- All connections to adoptable sewers shall be by manufactured junction pipes. Saddle connections will not be permitted.
- All sewers for adoption with greater than 1.20 metres cover in roads or 0.9m metres cover in fields shall have Class S granular bed and surround.
- Any sewer for adoption with less than 1.2 metres cover in roads or 0.9 metres cover in fields shall have a minimum of 150mm S14 concrete surround. Flexibility shall be maintained by the provision of Flexcell or similar approved joint filler breaks in the concrete surround at each pipe joints

GENERAL

- All adoptable sewers and associated works are to comply fully with "Sewers for Adoption" 7th Edition dated August 2012, and Undertakers Supplemental Guide
- All highway works to be to adoptable standards and to comply fully with the Local Authority specification.
- All private drainage works are to comply fully with part H of the Building Regulations
- All existing invert levels to be checked by the Contractor at the start of works and any discrepancies notified to REFA. All levels are based on topographical survey information provided by others.
- All materials to bear the relevant B.S. Remark and comply fully with the specifications. All concrete & concrete products must use Sulphate resistant cement (unless the site investigation report proves that sulphate attack from soils and groundwater will not occur)
- All opening notices etc. as required under highways acts etc. are to be obtained prior to commencement of works. All works are to be inspected by L.A., NHBC or Relevant Water Authority as applicable.

C.D.M. REGULATIONS 2007

In line with the above regulations we are obliged to inform the Client of the risks that may be encountered in the construction of these works. All design work has been carried out with Health and Safety aspects given full consideration. Wherever possible risks have been eliminated from the design, however due to the very nature of this type of work it is not possible to remove all the risks from the design. We would also respectfully remind the Client of his obligations to take all reasonable steps in ensuring that only competent Contractors who have a valid safety policy are employed. They should also provide satisfactory responses at tender stage as to the manner in which they will deal with the elements of risk involved in this type of work and in particular those highlighted by REFA below:-

- Support / treatment for ALL excavation work.
 - Guarding to edges of excavations to prevent people, materials and vehicles falling into excavation.
 - Guarding of excavations outside working hours to prevent unauthorised access.
 - Undermining to adjacent roads or structures.
 - Confined space operations.
 - Dealing with existing services.
 - Traffic management on existing highways.
 - Procedure to be followed in event of accident or emergency.
 - Method of working where contaminated ground is present on site.
 - Confirmation will be required that all operatives are adequately trained, copies of relevant training certificates to be supplied.
- The above list is by no means exhaustive but it does highlight operations that present a risk to contractors and the general public. For clarification on any item please contact REFA.

rev Revision details RevBy Date

Drawing Stage		Drawing Status	
☐ Draft		☐ Comments	☐ Tender
☒ Issued		☐ Information	☐ Construction
		☒ Approval	☐ As Built

Client

**McDERMOTT
HOMES**

Job title

**LONGSIGHT ROAD
COPSTER GREEN**

Drawing title

**ROAD AND MAIN
DRAINAGE LAYOUT**

REFA

CONSULTING ENGINEERS
CIVIL • STRUCTURAL
GEOTECHNICAL • ENVIRONMENTAL

Date 22.1.13	Scale 1/500	Drawn GWH
DRAWING No 13007/01/1		Rev

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PLEASE NOTE THAT THIS DRAWING IS ISSUED FOR INFORMATION/TENDER
PURPOSES ONLY UNTIL TECHNICAL APPROVAL HAS BEEN GRANTED.
ANY WORK UNDERTAKEN PRIOR TO TECHNICAL APPROVAL BEING GRANTED IS AT THE CLIENTS RISK.

IF THE CLIENT OR CONTRACTOR
IDENTIFIES ANY DISCREPANCIES
BETWEEN THE DRAWINGS PRODUCED
BY REFA FOR THIS PROJECT THEN
THEY SHOULD CONTACT REFA
IMMEDIATELY AND BEFORE ANY WORKS
COMMENCE OR PROCEED
IF IN DOUBT ASK !!!

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PLAN GRID IS LOCAL BASED UPON O.S. NATIONAL GRID
ALL LEVELS ARE IN METRES BASED UPON O.S. DATUM,
ESTABLISHED USING THE O.S. NATIONAL GPS NETWORK