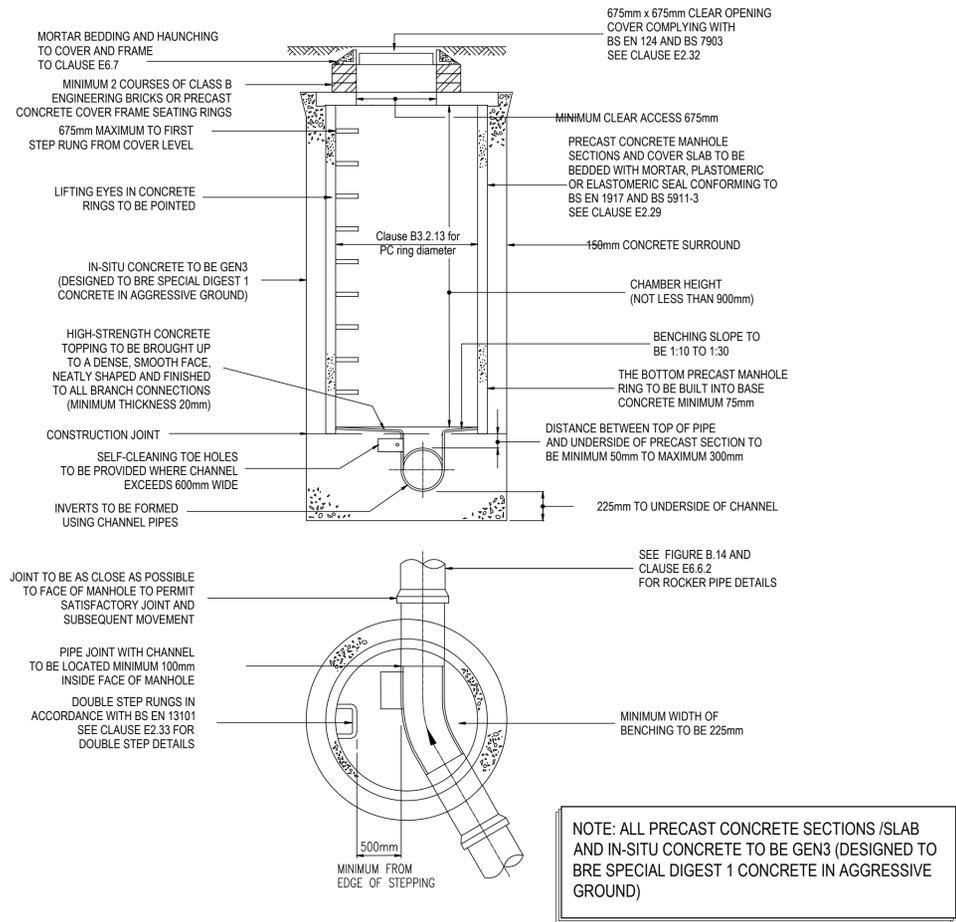


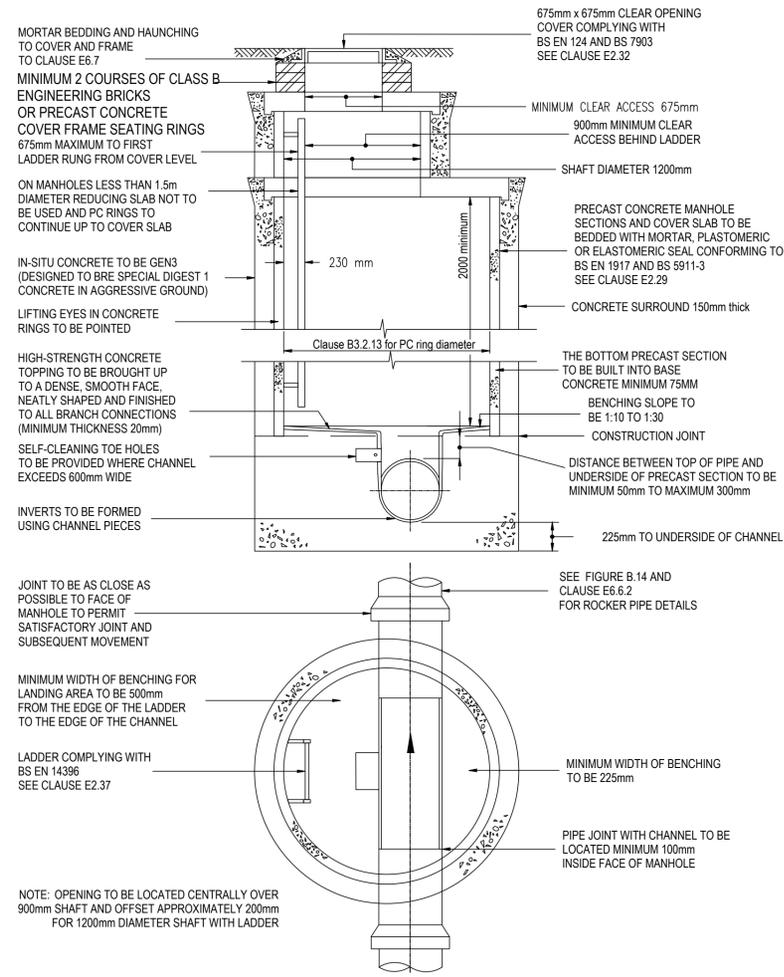
**FIGURE B.12**  
TYPICAL MANHOLE DETAIL - TYPE 2

Maximum depth from cover level to soffit of pipe 3.0 m



**FIGURE B.8**  
TYPICAL MANHOLE DETAIL - TYPE 1A

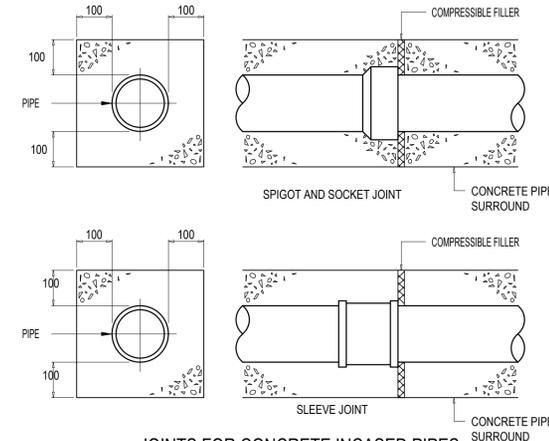
Depth from cover level to soffit of pipe 3 m to 6 m



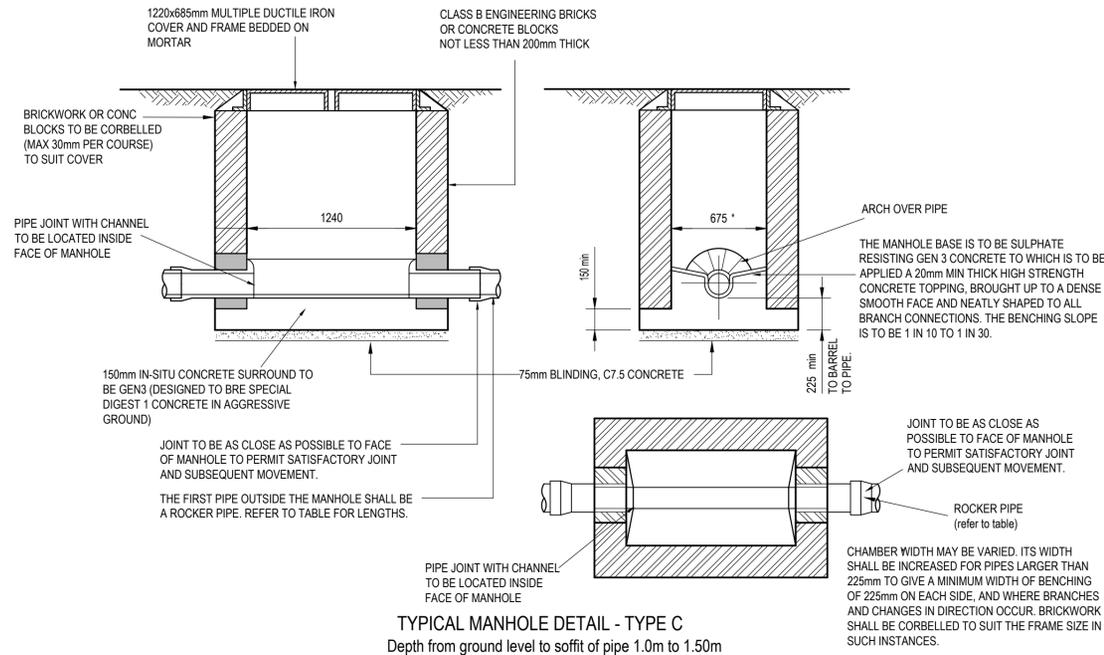
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	NOMINAL DIAMETER (mm)	ROCKER PIPE EFFECTIVE LENGTH (m)
LESS THAN 375	1200	150 - 600	0.60
375 - 450	1350	601 - 750	1.00
500-700	1500	OVER 750	1.25
750-900	1800		
GREATER THAN 900	DIAMETER + 900		

NOTE: DIAMETER TO BE INCREASED BY ONE SIZE FOR MANHOLES WITH LARGE NUMBERS OF CONNECTIONS.

NOTE: THE USE OF PRECAST RECTANGULAR CONCRETE MANHOLE UNITS WITH 150mm GRADE GEN3 CONCRETE SURROUND (DESIGNED TO BRE SPECIAL DIGEST 1 CONCRETE IN AGGRESSIVE GROUND) IS PERMITTED



JOINTS FOR CONCRETE INCASED PIPES



**TYPICAL MANHOLE DETAIL - TYPE C**  
Depth from ground level to soffit of pipe 1.0m to 1.50m

**SEWER ADOPTION NOTES**

- ALL WORKS FOR ADOPTION UNDER A SECTION 104 AGREEMENT SHALL BE CARRIED OUT TO THE NATIONAL WATER COUNCIL GUIDE 'SEWERS FOR ADOPTION' 7TH EDITION AND THE REQUIREMENTS OF DWR CYMRU WELSH WATER AS THE STATUTORY SEWERAGE UNDERTAKER AND THE WELSH MINISTERS BUILD STANDARD.
- A SECTION 106 APPLICATION TO CONNECT MUST BE MADE TO DCWW. THE DEVELOPER SHALL GIVE 21 DAYS NOTICE PRIOR TO CONNECTION. THE WORKS MAY ONLY BE UNDERTAKEN BY A DCWW HEALTH & SAFETY APPROVED CONTRACTOR.
- AN ACCREDITED CONTRACTOR BY THE BRITISH PLASTICS FEDERATION WILL BE USED TO LAY ANY ADOPTABLE PLASTIC PIPES. A COPY OF THE ACCREDITATION CERTIFICATE TO BE SUPPLIED TO DCWW BEFORE ANY ORDER IS PLACED OR WORK COMMENCES ON SITE.

**GENERAL NOTES:**

- THE PLANNING, DESIGN AND CONSTRUCTION OF SEWERS SHALL BE IN ACCORDANCE WITH SEWERS FOR ADOPTION 7th EDITION.
- THE MINIMUM SIZE OF SEWER WHERE GUIDE BARS, SAFETY CHAINS, OR OTHER SAFETY DEVICES ARE REQUIRED IN MANHOLES SHALL BE 375mm DIAMETER.
- ALL TYPE 1 AND 2 MANHOLES SHOULD HAVE A CONCRETE SURROUND. CONCRETE RINGS SHALL BE SEALED USING 'TOKSTRIP' AND LIFTING EYES POINTED WITH RESIN MODIFIED MORTAR.
- COMPLIANCE WITH HEALTH AND SAFETY MATTERS ON ANY TRENCH/MANHOLE IS OBLIGATORY AND A PERMIT TO ENTER A CONFINED SPACE IS REQUIRED WHEN CONNECTING SITE DRAINAGE TO THE EXISTING PUBLIC SEWERAGE SYSTEM. A PERMIT TO ENTER A CONFINED SPACE WILL BE OBTAINED FROM DCWW PRIOR TO WORKS COMMENCING ON ANY PUBLIC SEWERAGE SYSTEM.
- WHERE THE PROPOSED SITE DRAINAGE CONNECTS TO THE PUBLIC SEWERAGE SYSTEM EITHER BY NEW JUNCTION, NEW MANHOLE OR AT AN EXISTING MANHOLE OR AT AN EXISTING MANHOLE, IT WILL REQUIRE THE SUBMISSION OF AN APPLICATION FOR SEWER CONNECTIONS FORM DCWW PRIOR TO WORKS COMMENCING.
- MH COVERS AND FRAMES SHALL BE DUCTILE IRON WITH A MINIMUM SQUARE OPENING OF 675mm. COVERS SHALL BE DOUBLE TRIANGLE FOR 675mm SQUARE OPENINGS AND BE PROVIDED WITH LOOSE BOLTED CONNECTIONS. TYPICALLY FRAMES ARE 150mm DEEP BUT IN ALL CASES THE FRAMES SHALL COMPLY WITH SF47.
- PROPOSED ADOPTABLE SEWERS ARE ONLY PERMITTED TO HAVE OTHER SEWER/GULLY CONNECTIONS AND OTHER SERVICES LAID AT AN ANGLE OF BETWEEN 45° AND 90° ACROSS THE LINE WITH A VERTICAL CLEARANCE IN EXCESS OF 300mm.
- ALL IRONWORK TO BE KITE MARKED BY BSI OR CERTIFIED BY EQUAL INSPECTION AUTHORITY.
- RED COLOURED PLASTIC MARKER TAPE AT LEAST 150mm WIDE SHALL BE LAID AT A MINIMUM OF 200mm ABOVE THE SOFFIT OF THE PIPE. THE TAPE SHALL BE PRINTED WITH THE WORDS 'GRAVITY SEWER' IN BOLD CAPITAL LETTERS THROUGHOUT ITS LENGTH AND AT INTERVALS NOT EXCEEDING 700mm AND SHALL INCORPORATE A CORROSION RESISTANT TRACING SYSTEM FOR NON-METALLIC PIPES.
- ALL WORKS TO BE ADOPTED UNDER THE SECTION 104 AGREEMENT SHALL BE INSPECTED BY DCWW IN ACCORDANCE WITH THEIR REQUIREMENTS (FOUL AND SURFACE WATER SEWERS).
- ALL WORKS TO BE ADOPTED UNDER THE SECTION 38 AGREEMENT SHALL BE INSPECTED BY VSC IN ACCORDANCE WITH THEIR REQUIREMENTS (HIGHWAY DRAINAGE).
- REFER TO LONGITUDINAL SECTIONS FOR DETAILS OF PIPE SIZES, INVERT LEVELS, BEDDING, ETC.
- SUBJECT TO DRAINAGE AUTHORITY APPROVAL PLASTIC PIPES FOR GRAVITY SEWER: 150mm - 300mm ARE TO BE EITHER:
  - MARLEY TWINWALL SYSTEM
  - UPONOR ULTRARIB SYSTEM
  - OSMA ULTRARIB SYSTEM
  - POLYSEWER TWINWALL SYSTEM
 PLASTIC PIPES APPROVAL BY DCWW FOR LARGER DIAMETER GRAVITY SEWERS ARE:
  - POLYPIPE - RIGISEWER (400mm-600mm)
  - POLYPIPE - RIDGISTORM XL (750mm-900mm)
 ANY PROPOSED CHANGES TO THE MATERIAL MUST BE AUTHORISED BY DCWW.
- SULPHATE RESISTING PORTLAND CEMENT SHALL BE USED FOR ALL CONCRETES AND MORTARS HAVING EQUIVALENT COMPRESSIVE STRENGTH OF 20N/mm OR GREATER (INCLUDING PRECAST CONCRETE PRODUCTS), UNLESS TESTS INDICATE OTHERWISE.
- FOUL WATER MANHOLES TO BE BADGED 'FW'. SURFACE WATER MANHOLES TO BE BADGED 'SW'.

REV.	DATE	DETAILS	AMENDMENTS	BY	CHK.

CLIENT:

**LOVELL**

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PROJECT:  
Lovell Homes  
West Carmarthen

DRAWING TITLE:  
Drainage Construction Details  
Sheet 1

DRAWN:	CHK:	STATUS:	SCALE:
TJP	SD	Information	NTS @ A1
DATE:	JOB NO:	DWG. NO:	REV.:
Nov 25	2262	106-1	-