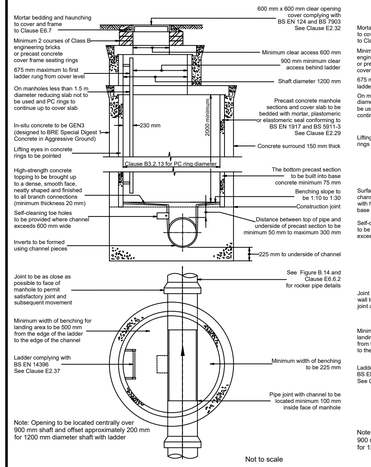
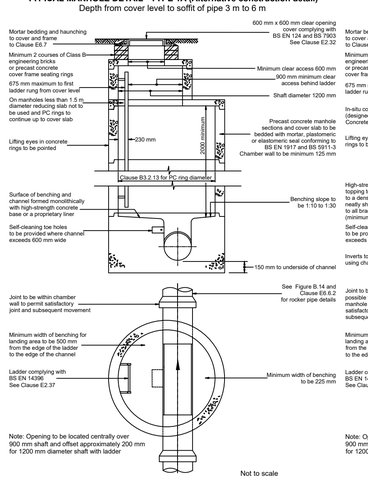
DO NOT SCALE

FIGURE B.8
TYPICAL MANHOLE DETAIL - TYPE 1A
Depth from cover level to soffit of pipe 3 m to 6 m



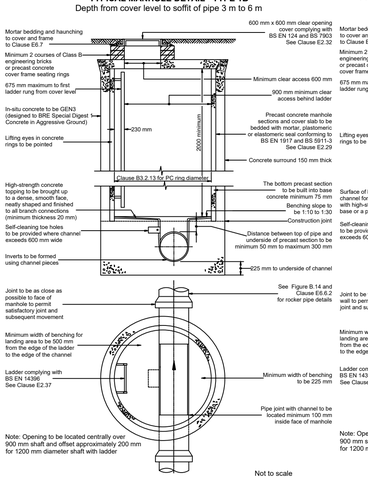
Not to scale

FIGURE B.9
TYPICAL MANHOLE DETAIL - TYPE 1A (Alternative construction detail)
Depth from cover level to soffit of pipe 3 m to 6 m



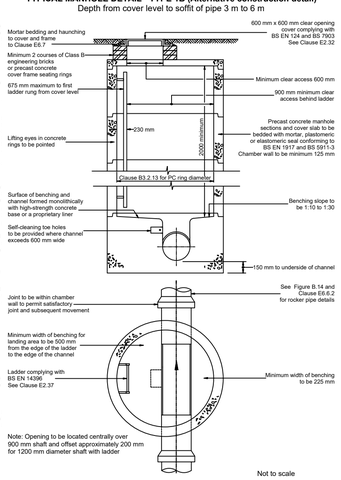
Not to scale

FIGURE B.10
TYPICAL MANHOLE DETAIL - TYPE 1B
Depth from cover level to soffit of pipe 3 m to 6 m



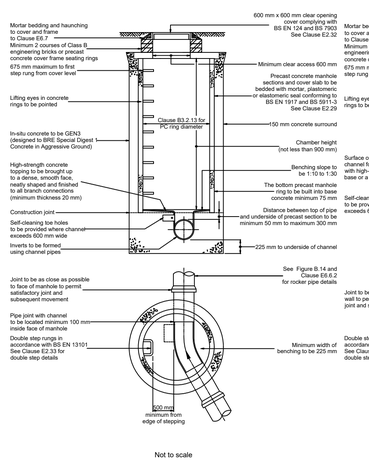
Not to scale

FIGURE B.11
TYPICAL MANHOLE DETAIL - TYPE 1B (Alternative construction detail)
Depth from cover level to soffit of pipe 3 m to 6 m



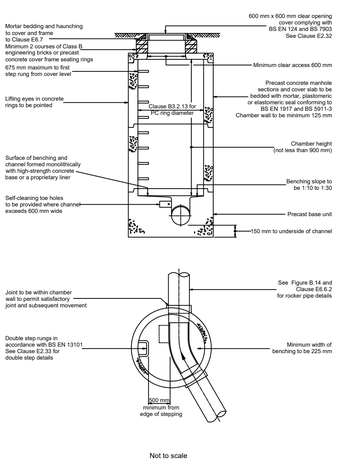
Not to scale

FIGURE B.12
TYPICAL MANHOLE DETAIL - TYPE 2
Maximum depth from cover level to soffit of pipe 3.0 m



Not to scale

FIGURE B.13
TYPICAL MANHOLE DETAIL - TYPE 2 (Alternative construction detail)
Maximum depth from cover level to soffit of pipe 3.0 m



Not to scale

FIGURE B.14
TYPICAL ARRANGEMENT OF PIPE JUNCTIONS WITHIN MANHOLES

Sectional Plan

Rigid pipes built into manhole should have a flexible joint as close as feasible to the external face of the structure and the length of the next rocker pipe should be as shown.

Nominal diameter (mm)	Maximum effective length (m)
150 - 600	0.6
601 - 750	1.00
over 750	1.25

All pipes entering the bottom of the manhole to have soffits level.

FIGURE B.15
TYPICAL VERTICAL AND RAMPED BACKDROP DETAIL
Note: Steeper gradients are preferred to the use of backdrops.
Type of backdrop to be used to be agreed with Undertaker.

Not to scale, dimensions in millimetres

FIGURE B.16
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (Flexible material detail)
Maximum depth from cover level to soffit of pipe
in areas subject to vehicle loading 3 m, non-entry

Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

FIGURE B.17
ALTERNATIVE TOP DETAILS FOR LIGHT VEHICLE LOADING AND LANDSCAPED AREAS - TYPE 3

Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

FIGURE B.18
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (Rigid material detail)
Maximum depth from cover level to soffit of pipe
in areas subject to vehicle loading 3 m, non-entry

Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

FIGURE B.19
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 3 (Rigid material detail)
Alternative maximum depth from cover level to soffit of pipe 3 m for areas not subject to vehicle loading or areas subject to light vehicle loading, non-entry

Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

FIGURE B.20
ALTERNATIVE BASE LAYOUTS FOR TYPE 3 CHAMBERS

Note: Where a bend is used immediately outside the manhole, this may be used as the rocker pipe

Not to scale

FIGURE B.21
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 4 (Flexible material detail)
Maximum depth from cover level to soffit of pipe 2 m, non-entry

Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

FIGURE B.22
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 4 (Alternative construction detail)
Maximum depth from cover level to soffit of pipe 2 m, non-entry

Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

FIGURE B.23
TYPICAL INSPECTION CHAMBER DETAIL - TYPE 4 (Rigid material detail)
Maximum depth from cover level to soffit of pipe 1 m, non-entry

Note: Where the access chamber is in the highway the Highway Authority can have specific requirements

Not to scale

BEDDING NOTES:

1. Granular pipe bedding material for pipes shall consist of aggregates from natural sources of sintered pulverised-fuel ash complying with the relevant provisions of BS.882 and BS.3797, Part 2 respectively, sized in accordance with the following table:

Nominal Bore of Pipe (mm)	Alternative Aggregate Sizes (mm)	
	Single Sized	Graded
100	10	-
150	10 or 14	14 to 5
225 - 300	10, 14, or 20	14 to 5 or 20 to 5
375 - 525	14 to 20	14 to 5 or 20 to 5
Exceeding	14, 20, or 40	14 to 5, 20 to 5, or 40 to 5

2. Selected backfill material, whether selected from locally excavated material or imported, shall consist of uniform, readily compactable material, free from vegetable matter, building rubbish, & frozen material, or materials susceptible to spontaneous combustion, & excluding clay of liquid limit greater than 80 and / or plastic limit greater than 55 and materials of excessively high moisture content. Clay lumps and stones shall be retained on 75mm and 37.5mm sieves respectively.

3. Compressible filler for interrupting concrete protection to pipelines shall consist of bitumen impregnated insulating board to BS.1142, Part 3 or other equally compressible material. The thickness of compressible filler shall be as follows:

Nominal Bore of Pipe (mm)	Thickness of compressible material (mm)
Less than 450	18
450 - 1200	36
Exceeding 1200	54

4. The contractor is to protect buried pipes (particularly shallow pipes) from damage caused by loads imposed by construction plant.

5. Below roads and other paved areas, trenches shall be backfilled with DOT specification Type 1 Sub-Base material up to road / paving formation level. All other trenches, unless otherwise specified shall be backfilled to finished ground level or underside of topsoil layer with well compacted excavated material

NOTES

1. All dimensions are in millimetres unless otherwise shown.
2. All adoptable drainage shall be constructed in accordance with 'Sewers for Adoption' 7th Edition and Welsh Water Details and Guidelines.
3. All private drainage works are to comply fully with Part H of the Building Regulations.
4. All existing invert levels to be checked by the contractor at the start of works and any other discrepencies notified to the Engineer prior to commencing works. All levels are based on topographical survey information provided by others.
5. All materials to bear the relevant B.S. Kitemark 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 to withstand a class 3 condition).
6. 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 United Utilities as applicable.
7. Where "Ultra Rib" UPVC pipes (or similar approved) are used in adoptable drainage they shall still be handled and laid in accordance with the specification and guidance issued by the High Performance Pipe Association.
 A Class S Bed and surround must be used for such pipes.
8. Trench backfill in highways to within 1m of highway shall, as directed by the Highway Authority be a suitable granular material all in accordance with Sewers for Adoption.
9. Cover loadings shall be as detailed on the Manhole Schedule.
10. Drain trenches should not be excavated lower than the foundations of any building nearby unless either:

 a) The trench is within 1m of the foundation, the trench is filled with concrete up to the lowest level of the foundation, or

 b) Where the trench is further than 1m from the building, the trench is filled with concrete to a level bellow the lowest level for the building equal to the distance from the build, less 150mm.

The minimum depth of cover to the crown of gravity pipes without protection should be as follows (as outlined in SFA 7th Figure B.3.1.10:

a) domestic gardens and pathway with any possibility of vehicular access, 0.35m;
b) domestic driveways, parking areas and yards with height restrictions to prevent entry by vehicles with a gross vehicle weight in excess of 7.5 tonnes, 0.5m;
c) domestic driveways, parking areas and narrow streets without footways (e.g., mews developments) with limited access for vehicles with a gross vehicle weight in excess of 7.5 tonnes, 0.9m.
d) agricultural land and public open space, 0.9m;
e) other highways and parking areas with unrestricted access to vehicles with a gross vehicle weight in excess of 7.5 tonnes, 1.2m.

DRAWING LIST

7387 / 01	Proposed Drainage Layout
7387 / 02	Highway Layout & Setting Out
7387 / 03	Drainage Construction Details
7387 / 04	Highway Construction Details
7387 / 05	External Works Layout
7387 / 06	Highway & Drainage Longsections
7387 / 07	S38 Agreement Plan
7387/ 08	Manhole Schedule
7387 / 09	Plot Manhole Schedules
7387 / 10	Surface Water Catchment Areas
7387 / 11	Flow Control Details
7387 / 12	Manhole Connection Plan

APPROVAL

Rev.	Date	Revision	By	Appd.
A	13.08.20	Updated to suit WW comments	LW	AJ

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Project
JACQUES WAY,
WREXHAM

Title
Drainage Construction Details
Sheet 1 of 2

DRAWING NUMBER	SCALE at A1	NTS	
7387 - 03 / 01	DATE	DEC 19	REVISION
	DRAWN	LW	A
	CHECKED	AJ	

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