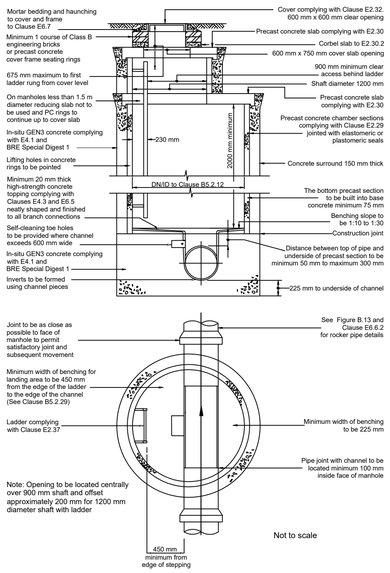
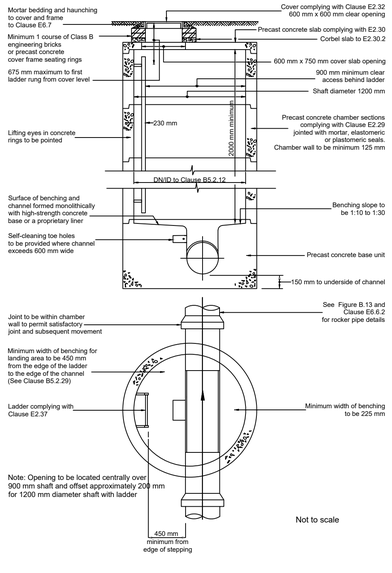
FIGURE B.5
TYPICAL MANHOLE DETAIL - TYPE A1
Depth from cover level to soffit of pipe 3 m to 6 m with ladder and reducing slab
Rigid material construction with concrete surround



Note: Opening to be located centrally over 900 mm shaft and offset approximately 200 mm for 1200 mm diameter shaft with ladder

Not to scale

FIGURE B.6
TYPICAL MANHOLE DETAIL - TYPE A2
Depth from cover level to soffit of pipe 3 m to 6 m with ladder
Rigid material construction without concrete surround

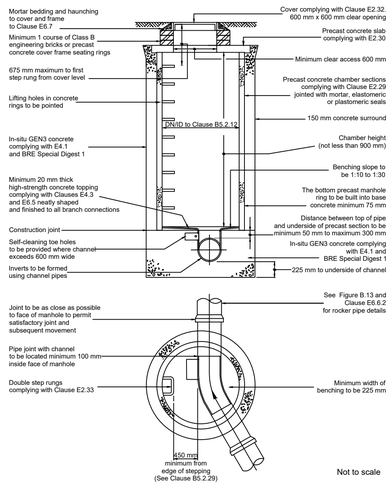


Note: Opening to be located centrally over 900 mm shaft and offset approximately 200 mm for 1200 mm diameter shaft with ladder

Not to scale

DCG Type A Manholes

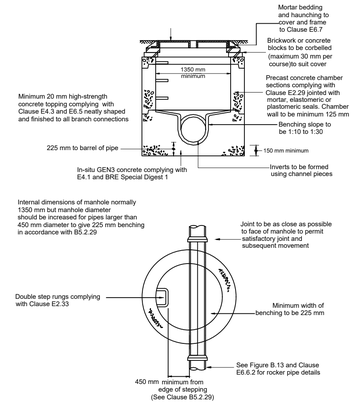
FIGURE B.10
TYPICAL MANHOLE DETAIL - TYPE B
Depth from cover level to soffit of pipe 1.5 m to 3.0 m
Alternative Rigid material construction with concrete surround



Not to scale

DCG Type B Manhole

FIGURE B.15
TYPICAL MANHOLE DETAIL - TYPE C
Depth from cover level to soffit of pipe less than 1.5 m
Maximum pipe size 450 mm diameter
Rigid material construction



Internal dimensions of manhole normally 1350 mm but manhole diameter should be increased for pipes larger than 450 mm diameter to give 225 mm benching in accordance with BS 5.2.29

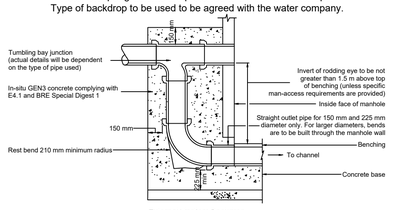
Note: The use of precast concrete chamber units to E2.29 with 150 mm GEN3 in-situ concrete complying with E4.1 and BRE Special Digest 1 in place of brickwork construction is permitted.

Not to scale

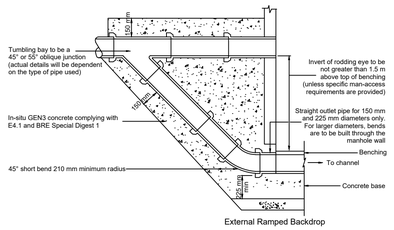
DCG Type C Manhole

FIGURE B.16
TYPICAL VERTICAL AND RAMPED BACKDROP DETAIL (RIGID MATERIAL)
For use in manhole types A to D

Note: Steeper gradients are preferred to the use of backdrops.
Type of backdrop to be used to be agreed with the water company.



External Vertical Backdrop

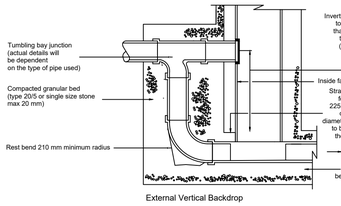


External Ramped Backdrop

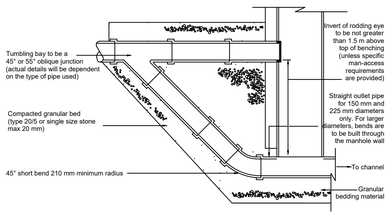
DCG Backdrop Details

FIGURE B.17
TYPICAL VERTICAL AND RAMPED BACKDROP DETAIL(FLEXIBLE MATERIAL)
For use in manhole types A to D

Note: Steeper gradients are preferred to the use of backdrops.
Type of backdrop to be used to be agreed with the water company.



External Vertical Backdrop

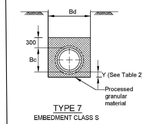


External Ramped Backdrop

DCG Backdrop Details

GENERAL NOTES

1. All dimensions are in millimetres unless otherwise shown
2. The developer shall verify and certify that the design criteria, Material standards and workmanship specifications for all adoptable works are in accordance with those set out in Sewerage Sector Guidance.
3. All private drainage works are to comply fully with part H of the Building Regualations.
4. All existing invert levels to be checked by the contractor at the start of works and any other discrepencies notified to the Engineer. 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 the Network Operator 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.
9. Details of any plastic pipes to be used shall be provided to ensure all products are approved. Pipe laying contractors will need to provide copies of certificates of attendance at a seminar or site training session held by the British Plastics Federation / Plastic Pipes group.
10. Shallow MH type manholes to provide additional headroom for maintenance. Similar to Type B manhole with minimum 600mm wide cut out benching down to 150-300mm above invert of large diameter pipe, with 1 in 30 fall from step rungs to the main channel.



TYPE 7
EMBEDMENT CLASS S

BEDDING FACTOR (See note 5)	
2.2	Narrow Trench
2.2 or 2.5	Wide Trench
2.2	Embankment

TABLE 2
Embedment Dimensions for Rigid Pipes

NOMINAL INT PIPE DIA	DIMENSION Y1 EVEN TRENCH BOTTOM (MIN)	DIMENSION Y2 ROCK OR UNEVEN TRENCH BOTTOM (MIN)	PROCESSED GRANULAR MATERIAL	DIMENSION Z (MIN)	MAX PERMITTED TRENCH WIDTH
150	100	200	10mm single sized or 14mm to 5mm graded	100	750
225	100	200		100	825
300	100	200		100	925
375	100	200	14mm single sized or 14mm to 5mm graded	100	1050
450	150	200		150	1150
525	150	250		150	1200
600	150	250	20mm single sized or 20mm to 5mm graded	150	1350
675	150	250		225	1450
750	225	300		225	1500
825	225	300		225	1600
900	225	300		225	1900
975	225	300		300	2000
1050	225	300		300	2100
1125	225	300		300	2200
1200	250	350		300	2300
1350	375	450		375	2500
1500	375	450		375	2700
1650	375	450		450	2800
1800	375	500	40mm single sized or 40mm to 5mm graded	450	3100
1950	400	500		525	3200
2100	425	650		525	3400
2400	450	675		600	3700

Note:
Bc = Outside Diameter of pipe
Bd = Effective trench width measured 300mm above crown of pipe

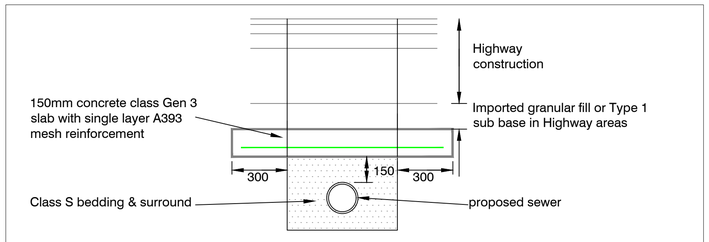
GENERAL NOTES

1. All dimensions in millimetres
2. The pipe embedments indicate the minimum trench dimensions which should be assumed for initial design purposes; the minimum trench widths shown will usually be sufficient to allow adequate compaction of the embedment material
   All pipework should be designed in accordance with BS EN 1295-1
3. For narrow trenching techniques the minimum trench width may be reduced, providing that the design indicates that the reduced embedment width is sufficient to support the pipework
4. Where selected excavated material may migrate into the native soil or vice versa, geotextile membrane shall be provided around the embedment material
5. Bedding factors are derived from "A guide to design loadings for buried rigid pipes" and IGN 4-11-02 "Revised bedding factor for Vitrified Clay drains and sewers"
6. Embedment dimensions shal be in accordance with Table 2

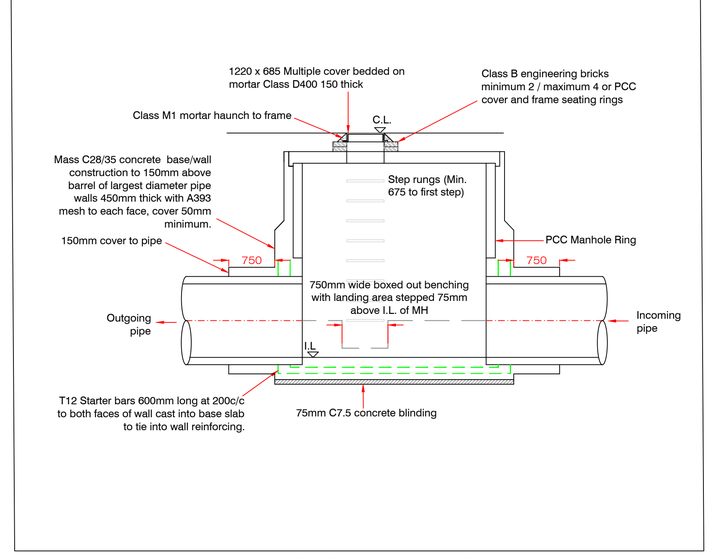
   PROCESSED GRANULAR MATERIAL:
7. Processed granular material shall comply with WIS 4-08-02. The grading of processed granular material shall be as specified
8. Limestone material shall not be used where the native ground or ground water is acidic, ie pH of 6 or less

   CONCRETE EMBEDMENTS & SURROUND:
9. Gen 3 concrete shall be used in non aggressive ground. Elsewhere the cement type and mix design should be selected to suit the sulphate content and pH of the ground and groundwater
10. Concrete surround details shall be adopted where cover to pipework is less than 1.2M and where it is necessary to protect the pipework from traffic loading
11. Pipes to be bedded/surrounded with concrete shall be supported on precast concrete settling blocks, the top face of of each block being covered with two layers of compressible packing

Pipe Embedment Details



CONCRETE PROTECTION DETAIL
TO PROPOSED SEWER
where cover is
less than 1.2m in highways
& less than 0.9m in landscape areas
(Not to scale)



SW Storage Manhole Detail

Rev	Date	Initials	Details
A	06/03/25	DA	Concrete protection detail updated.

Drawing Revisions

North Point

Quality Ass.

UKAS 005 Quality Assurance ISO 9001:2008 SGS Certificate GB02/54539

Project
Mount Road
Gorton

Client
Kellen Homes

Title
Typical Adoptable Drainage Details

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Environmental**Planners**
Civil**Engineers**
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Original Size A1

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Drawn KF | Checked By SAP | Date FEB 24 | Scale NTS

Drawing No. 30571/16 | Revision A