

EXISTING 12000 BRICK SURFACE WATER CULVERT

FACILITATE EXISTING BRICK CULVERT

HANDRAILS

Min Banching 325

Min Banching 450

INVERT ACCESS STEPS

SAFETY CHAINS

Ø12000

PROPOSED SURFACE WATER TO
CONNECT TO EXISTING SURFACE
WATER CULVERT SUBJECT TO
APPROVAL BY LLFA

Technical diagram of a circular manhole structure showing safety features and dimensions:

- MIN. BECHING 450**: Dimension indicating the minimum bedding thickness around the manhole structure.
- INVERT ACCESS STEPS**: Label for the access steps leading down to the invert level.
- SAFETY CHAINS**: Dimension indicating the length of the safety chains.
- HANDRAILS**: Label for the handrails installed on the manhole structure.
- MIN. BECHING 250**: Dimension indicating the minimum bedding thickness for the handrails.
- 4500**: Dimension indicating the overall diameter of the manhole structure.

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.

Technical drawing of a circular manhole structure. The drawing shows the manhole structure with a concrete base and walls, and a metal frame at the top. Key dimensions and labels include:

- Handrails:** Located on the left and right sides of the manhole.
- Safety Chains:** Located at the bottom of the manhole.
- Invert Access Steps:** Located on the right side of the manhole.
- Min. Benching 125:** Dimension indicating the minimum benching required for the invert access steps.
- Min. Benching 450:** Dimension indicating the minimum benching required for the invert access steps.
- Handrails:** Located on the left and right sides of the manhole.
- Safety Chains:** Located at the bottom of the manhole.
- Invert Access Steps:** Located on the right side of the manhole.
- Min. Benching 125:** Dimension indicating the minimum benching required for the invert access steps.
- Min. Benching 450:** Dimension indicating the minimum benching required for the invert access steps.

GENERAL

1. All adoptable sewers and associated works are to comply fully with 'Design and Construction Guidance & Practices'
2. All highway works to be to adoptable standards and to comply fully with the Local Authority specification.
3. All private drainage works are to comply fully with Part H of the Building Regulations
4. All existing inverts 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.
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)
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 LA, NHBC or Relevant Water Authority as applicable.

CD.M. REGULATIONS 2015

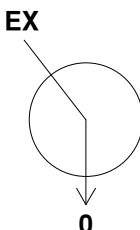
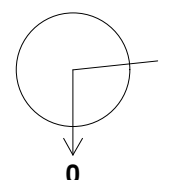
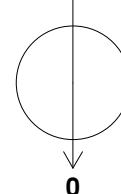
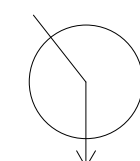
In line with the above regulations we are obliged to inform the Client of their responsibilities under section CDM 15/1, and residual risks that may be encountered in the construction of these works.
All design work has been carried out with Health and Safety aspects fully under consideration.
Wherever 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 obligation to take all reasonable steps in ensuring that only competent Contractors 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:-

1. Support / treatment for ALL excavation work.
2. Guarding to edges of excavations to prevent people/materials and vehicles falling into excavation.
3. Guarding of excavations outside working hours to prevent unauthorised access.
4. Undermining to adjacent roads or structures.
5. Confined space operations.
6. Dealing with existing services.
7. Traffic management on existing highways.
8. Procedure to be followed in event of accident or emergency.
9. Method of working where contaminated ground is present on site.
10. Confirmation will be required that all operatives are adequately trained, copies of relevant training 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.

Diagram illustrating the internal structure and safety features of a 1500mm diameter manhole. The manhole is shown in cross-section, revealing the following components and dimensions:

- Manhole Diameter:** 1500mm (indicated by a dimension line across the top).
- Handrails:** Two handrails are shown on the left side, with a dimension of 325mm between them.
- Min. Banching:** A dimension of 325mm is shown for the minimum banching area.
- Safety Chains:** A horizontal line labeled "SAFETY CHAINS" is shown at the bottom of the manhole.
- Invert Access Steps:** A set of steps is shown on the right side, with a dimension of 2700mm for the height of the steps.
- Min. Banching:** A dimension of 450mm is shown for the minimum banching area near the steps.

Manhole Number	Cover Level		Pipe				Manhole Size	Types		Other Detail				
			Coordinates	Depth To Soffit	Connections	Code		Inverts	Diams	Manhole	Cover	Depth & Size (mm)	Means of Access	Safety Chains
S100	46.550						2700	TYPE A2 FIGURE B7	D400	150 600 x 600 750 x 600 COVER SLAB OPENING	Ladder	Yes	Yes	Yes
	2.260		0	1.000	42.790	1500								
S101	46.167		1	1.000	41.956	1500	3000	TYPE A2 FIGURE B7	D400	150 600 x 600 750 x 600 COVER SLAB OPENING	Ladder	Yes	Yes	Yes
	2.711		0	1.001	41.956	1500								
S102	45.827		1	1.001	41.618	1500	2700	TYPE A2 FIGURE B7	D400	150 600 x 600 750 x 600 COVER SLAB OPENING	Ladder	Yes	Yes	Yes
	2.709		0	1.002	41.618	1500								
S103	45.779		1	1.002	40.697	1500	2700	TYPE A2 FIGURE B7	D400	150 600 x 600 750 x 600 COVER SLAB OPENING	Ladder	Yes	Yes	Yes
	3.582		0	1.003	40.697	1500								

MANHOLES TO BE CONSTRUCTED IN ACCORDANCE
WITH THE DESIGN AND CONSTRUCTION GUIDANCE
- MAY 2021

MANHOLE LADDER TO BE CONSTRUCTED IN LINE
WITH DESIGN AND CONSTRUCTION GUIDE CLAUSE
DCG CLAUSE E2.37

ROCKER PIPES WILL BE USED IN LINE WITH DESIGN
AND CONSTRUCTION GUIDANCE
FOR PIPES 225-600 DIA - ROCKER PIPE EFFECTIVE
LENGTH:600
FOR PIPES 825 DIA AND ABOVE - ROCKER PIPE
EFFECTIVE LENGTH SHALL BE 1250. ROCKER PIPES
TO BE USED UNTIL THE PIPE OUTSIDE DIAMETER
EXCEEDS THE EFFECTIVE LENGTH OF THE ROCKER
PIPE

NOTE ALL CONNECTIONS TO BE MADE SOFFIT
LEVEL UNLESS INDICATED OTHERWISE