



1. All dimensions are in millimeters.
2. CONCRETE BENCHING AND PIPE SURROUND
Should be placed in single continuous operation from top of base slab to top of benching and pipe surround.
3. CONNECTION INTO MANHOLES
Should be constructed at soffit level unless detailed differently on contract drawings.
4. METAL WORK :- Shall be as shown on Standard Detail sheet numbers
HANDRAILING — " No :- 9
LADDERS — " 8
SAFETY CHAINS — " 10

A concrete surround is not normally required to manholes unless installed in areas of unstable ground, under conditions of flotation or where subject to exceptional or eccentric loads. In which cases a 150mm surround of at least 20 N/mm² concrete shall be provided. Any joints should be staggered with precast concrete joints.

5. MINIMUM LENGTH OF CHANNEL (X MIN)

CHAMBER DIA	"X" Min
1200	950
1350	1000
1500	1050
1800	1150
2100	1300
2400	1450
2700	1550
3000	1700

7. CUT ENDS OF REINFORCED CONCRETE PIPES.
Shall be treated with epoxy resin paint / mortar

8. STANDARD FEATURE ACCESS

For standard access step irons or ladder are to be used with 600 x 600 clear opening - For feature access a ladder shall be used with 750 x 600 clear opening cover and frame. See Standard Detail sheet No. 6. Double steps shall be plastic encapsulated carbon steel manhole step irons at 300 centres horizontally and vertically may be used as an alternative to double steps.

9. INVERT ACCESS DETAILS

Shall be shown as Standard Detail sheet No. 7

10. COVER AND FRAME

150mm deep covers are to be used in Category 1, 2, & 3 Roads.
100mm deep covers are to be used in Category 4 Roads.
Boulev triangular covers are to be used in carriageway.
Road category to be designated by the Highway Authority.

11. CONCRETE

Designated mix references FND3, FND4A and FND4B to be used in soil conditions with sulphate classes 3, 4A and 4B respectively (refer to specification clause 4.3.1)

11. Specification clause references relate to CESWI 5th

13. Where 'v.f.' appears in annotation refer to Variable Feature Table.



VARIABLE FEATURES (v. f.)

A	Manhole shaft and double step access		For 1200, 1350 and 1500 manhole chambers (or where the shaft is <3m) a full height (no access shaft) construction is preferred. For depths to soffit from cover <3.5m Double Step Access shall be used in places such as a ladder. For Double Step Access (Type 1) minimum internal manhole access shaft diameter shall be 1050. For Ladder Access (Types 2 & 3) minimum internal shaft diameter shall be 1200.	
	Multiple Cover		Depth to soffit from cover level <1.5m	
B	Minimum Clear Opening Size 750 x 750 on 1500 chamber/shaft 1200 x 675 on 1200 and above chamber/shaft		Minimum Clear Opening Size 600 x 600 for Double Step Access 800 x 800 for Ladder Access 750 x 900 for Feature Ladder Access	
	Clear Step		Depth to soffit from cover level >1.5m	
C	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
D	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
E	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
F	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
G	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
H	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
I	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
J	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
K	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
L	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
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P	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
Q	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
R	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
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V	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
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BX	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
BY	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	Hole Size in cover slab
BZ	Chamber Size	Hole Size in cover slab	Cover Frame Sealing Ring on cover slab Double Step Access	