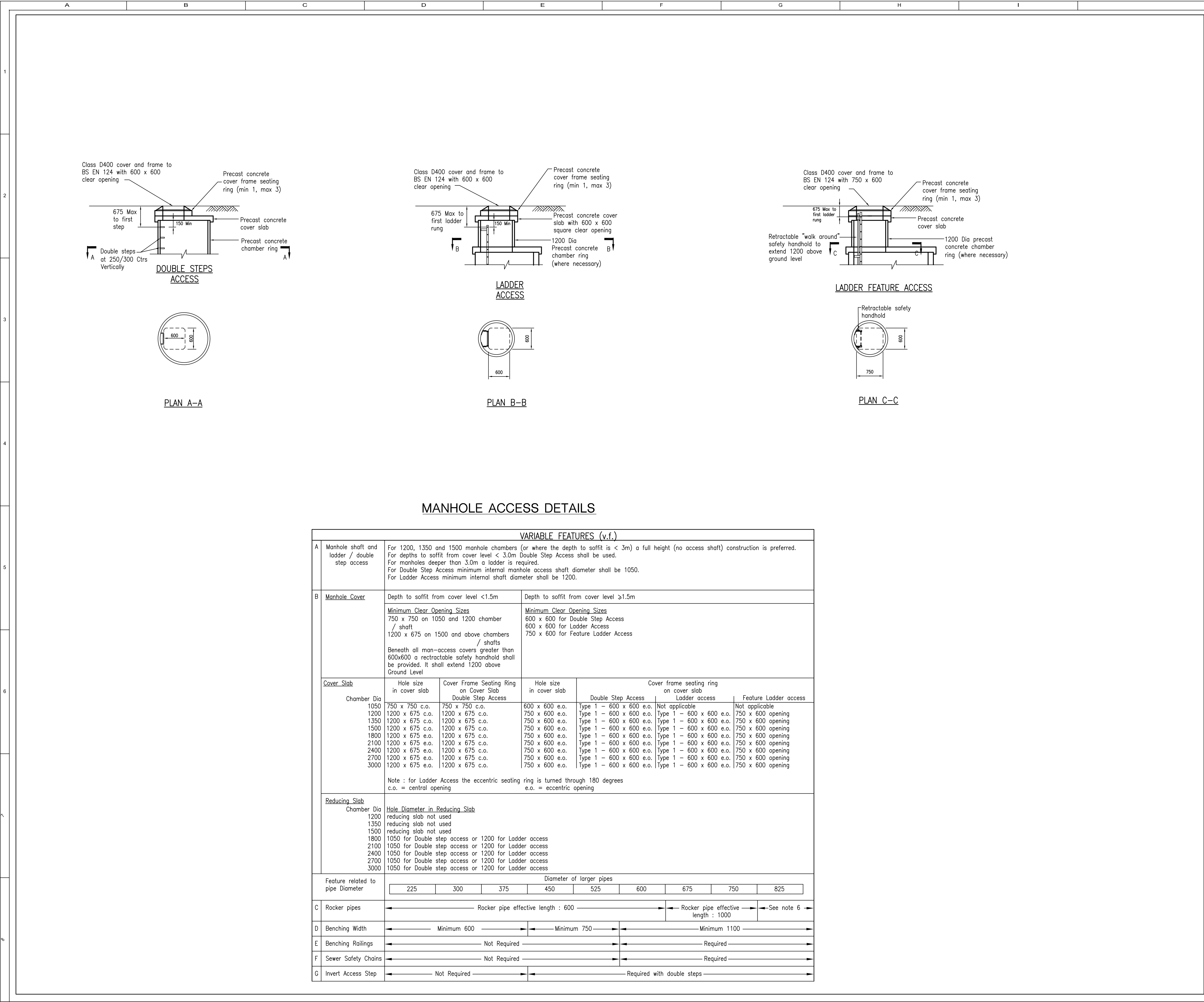




MANHOLE ACCESS DETAILS

VARIABLE FEATURES (v.f.)											
A	Manhole shaft and ladder / double step access	For 1200, 1350 and 1500 manhole chambers (or where the depth to soffit is < 3m) a full height (no access shaft) construction is preferred. For depths to soffit from cover level < 3.0m Double Step Access shall be used. For manholes deeper than 3.0m a ladder is required. For Double Step Access minimum internal manhole access shaft diameter shall be 1050. For Ladder Access minimum internal shaft diameter shall be 1200.									
B	<u>Manhole Cover</u>	Depth to soffit from cover level <1.5m			Depth to soffit from cover level ≥1.5m						
		<u>Minimum Clear Opening Sizes</u> 750 x 750 on 1050 and 1200 chamber / shaft 1200 x 675 on 1500 and above chambers / shafts Beneath all man-access covers greater than 600x600 a retractable safety handhold shall be provided. It shall extend 1200 above Ground Level			<u>Minimum Clear Opening Sizes</u> 600 x 600 for Double Step Access 600 x 600 for Ladder Access 750 x 600 for Feature Ladder Access						
	<u>Cover Slab</u>	Hole size in cover slab	Cover Frame Seating Ring on Cover Slab Double Step Access	Hole size in cover slab	Cover frame seating ring on cover slab						
	Chamber Dia				Double Step Access	Ladder access	Feature Ladder access				
	1050	750 x 750 c.o.	750 x 750 c.o.	600 x 600 e.o.	Type 1 – 600 x 600 e.o.	Not applicable	Not applicable				
	1200	1200 x 675 c.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
	1350	1200 x 675 c.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
	1500	1200 x 675 c.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
	1800	1200 x 675 e.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
	2100	1200 x 675 e.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
	2400	1200 x 675 e.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
	2700	1200 x 675 e.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
	3000	1200 x 675 e.o.	1200 x 675 c.o.	750 x 600 e.o.	Type 1 – 600 x 600 e.o.	Type 1 – 600 x 600 e.o.	750 x 600 opening				
		Note : for Ladder Access the eccentric seating ring is turned through 180 degrees c.o. = central opening			e.o. = eccentric opening						
	<u>Reducing Slab</u>	Hole Diameter in Reducing Slab									
	Chamber Dia	reducing slab not used									
	1200	reducing slab not used									
	1350	reducing slab not used									
	1500	reducing slab not used									
	1800	1050 for Double step access or 1200 for Ladder access									
	2100	1050 for Double step access or 1200 for Ladder access									
	2400	1050 for Double step access or 1200 for Ladder access									
	2700	1050 for Double step access or 1200 for Ladder access									
	3000	1050 for Double step access or 1200 for Ladder access									
	Feature related to pipe Diameter	Diameter of larger pipes									
		225	300	375	450	525	600	675	750	825	
C	Rocker pipes	←————— Rocker pipe effective length : 600 —————→					←————— Rocker pipe effective length : 1000 —————→		←—See note 6 —→		
D	Benching Width	←————— Minimum 600 —————→			←————— Minimum 750 —————→		←————— Minimum 1100 —————→				
E	Benching Railings	←————— Not Required —————→					←————— Required —————→				
F	Sewer Safety Chains	←————— Not Required —————→					←————— Required —————→				
G	Invert Access Step	←————— Not Required —————→			←————— Required with double steps —————→						

NOTES

- All dimensions are in millimetres.
- METALWORK**
Ladders, handrailing and safety chain shall be as shown on UU Standard Detail STND/01/002
- Double steps shall be plastic encapsulated carbon steel.
- 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.
Double triangular covers are to be used in carriageway.
Road category to be designated by the Highway Authority.
Frame to be set as per specification.
- CONCRETE**
All in-situ concrete to be DC-3 or FND 3
- Refer to v.f."C"
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

A	FOR INFORMATION	PJG	FE	SD	03.07.09
REV	DESCRIPTION	DRW	CHKD	APPD	DATE
 UNITED UTILITIES LINGLEY GREEN AVENUE GREAT SANKEY WARRINGTON W9 3LP TEL: 01925 234 000 www.unitedutilities.com		PROJECT No. DRAWING STATUS			
PROJECT		STANDARD DETAIL			
TITLE		MANHOLE ACCESS DETAILS AND VARIABLE FEATURES (V.F.)			
DRAWN		DATE	DESIGN ENG	DATE	VERIFY ENG
TBC		TBC			
ORG No.		STND_01_013		SCALE	
				SHEET	OF
VER No.	A	The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water plc. The content of this document may not be used for purposes other than that for which it has been supplied and may not be reproduced, either wholly or in part, in any way whatsoever. It may not be used by, or its contents divulged to, any other person whatsoever without the prior written permission of United Utilities Water plc.			
A1-STD	Do not scale this drawing - if in doubt ask. Previous versions of this drawing should be stamped Superseded or destroyed.				