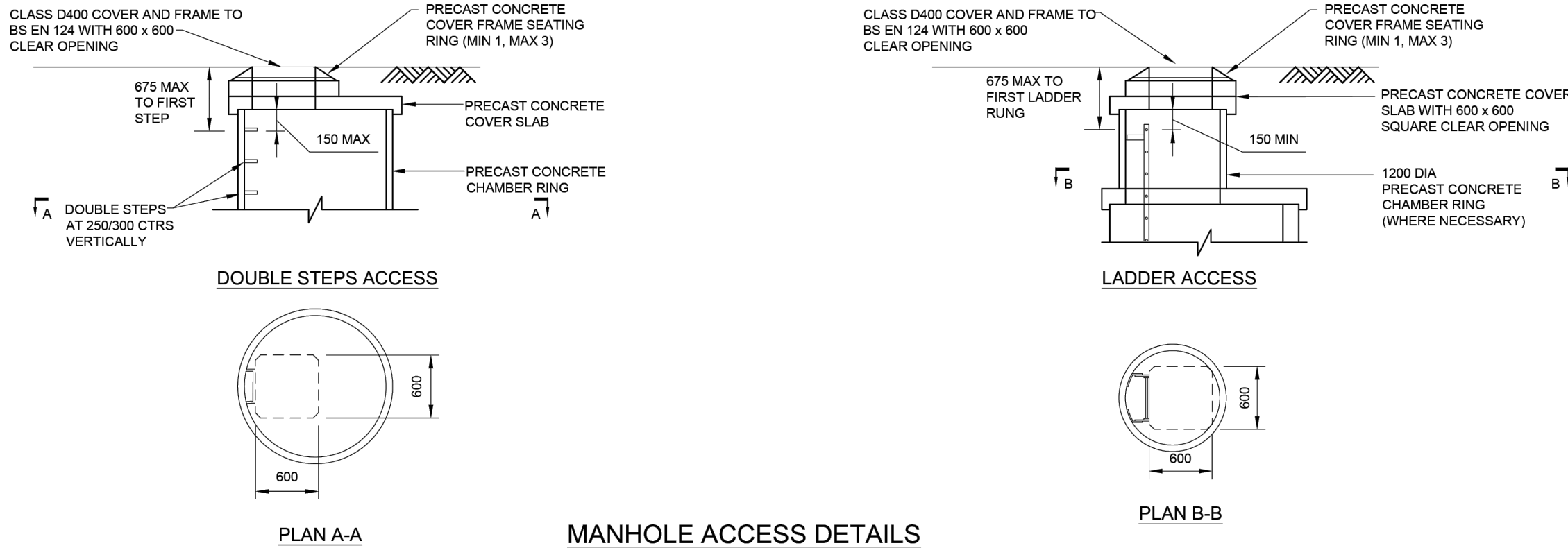


REV	DATE	DESCRIPTION	DRW	CHK
P01	28/04/2024	PRELIMINARY ISSUE	SNK	GS
P01	25/07/2024	REVISED TO UU COMMENTS	SNK	GS
C01	07/11/2024	TENDER ISSUE	SNK	GS

HEALTH & SAFETY

- CONTRACTOR SHOULD BE AWARE OF GENERAL CONSTRUCTION RISKS TO PREVENT SLIPS, TRIPS AND FALLS AND TAKE NECESSARY PRECAUTIONS WITHOUT SPECIAL INSTRUCTION.
- CONTRACTOR TO PROVIDE TRENCH SUPPORTS AS APPROPRIATE AND ENSURE THAT PLANT REMAINS A SAFE DISTANCE FROM TRENCHES PRIOR TO INSTALLING DRAINAGE.
- THE TIME THAT EXCAVATIONS ARE OPEN ON SITE SHOULD BE KEPT TO A MINIMUM AND ALL TRENCHES SHOULD BE SURROUNDED BY A BARRIER.
- CONNECTIONS TO EXISTING SEWERS TO BE MADE BY SW APPROVED CONTRACTOR ONLY.
- CONTRACTOR TO MAKE OPERATIVES AWARE OF ASSOCIATED DANGERS TO HEALTH SUCH AS LEPTOSPIROSIS (WELLS DISEASE) AND RECOMMENDED PRECAUTIONS. ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING TO BE PROVIDED AS REQUIRED.
- UNFINISHED MANHOLES MUST BE COVERED WITH LOAD BEARING MATERIALS AND SURROUNDED WITH BARRIER.
- PIPES & CABLES
- SERVICE RECORDS TO BE REFERRED TO PRIOR TO WORK COMMENCING. CONTRACTOR TO PROCEED WITH CAUTION AND SERVICES TO BE LOCATED BY HAND DIG AND PROTECTED ACCORDINGLY.
- CONTRACTOR TO ENSURE RELEVANT MEASURES ARE TAKEN TO KEEP PLANT AND PEOPLE A SAFE DISTANCE FROM STEEP SLOPES DURING THE WORKS.
- CONTRACTOR TO ENSURE THAT PROCEDURES ARE IN PLACE TO KEEP PEOPLE A SAFE DISTANCE FROM WORKING PLANT WHERE NECESSARY.
- CONTRACTOR TO REFER TO GROUND INVESTIGATION REPORT FOR CONTAMINATION TESTS AND TO PROVIDE ADEQUATE WELFARE FACILITIES AND PROTECTIVE CLOTHING AS REQUIRED.



- NOTES
- ALL DIMENSIONS ARE IN MILLIMETRES
  - METALWORK LADDERS, HANDRAILING AND SAFETY CHAIN SHALL BE AS SHOWN ON DEVELOPER SERVICES DETAIL 9 (STND/19/009)
  - DOUBLE STEPS SHALL BE PLASTIC ENCAPSULATED CARBON STEEL TO BS EN 1247-2
  - 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.1 "C" ROCKER PIPE EFFECTIVE LENGTH SHALL BE 1200, ROCKER PIPES TO BE USED UNTIL THE PIPE OUTSIDE DIAMETER EXCEEDS THE EFFECTIVE LENGTH OF THE ROCKER PIPE

CURRENT ISSUE INFORMATION

A	SC	SH	SC	FOR INFORMATION	15/04/18
VERSION	DRW	CHK	REC		DATE



UNITED UTILITIES LTD

DEVELOPER SERVICES

DETAIL 10

VARIABLE MANHOLE

GUIDANCE NOTES

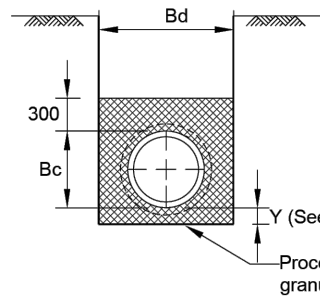
SCALE	NTS	SHEET SIZE	A3
REVISION	STND/19/010	REVISION	A

© The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water Limited. 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 Limited. Copyright Acknowledgement: Use of Ordnance Survey map data sanctioned by the controller of HM Stationery Office. OS Licence Number 1000191026. Crown copyright reserved. Unauthorised production infringes copyright.

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		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	20mm single sized or 20mm to 5mm graded	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		450	3100
1950	400	500	40mm single sized or 40mm to 5mm graded	525	3200
2100	425	650		525	3400
2400	450	675		600	3700

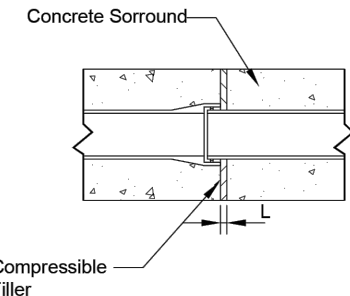
Note:  
Bc = Outside Diameter of pipe  
Bd = Effective trench width measured 300mm above crown of pipe



TYPE 7  
EMBEDMENT CLASS S

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

FLEXIBLE JOINT DETAIL FOR  
CONCRETE BED AND CONCRETE SURROUND  
SPIGOT AND SOCKET PIPES



CONCRETE SURROUND  
(CLASS Z)

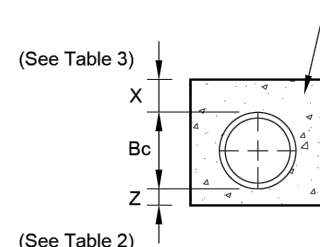


TABLE 3 Thickness of Compressible Fill (L)		
Nominal Internal Pipe Dia	Dim. X mm	Compressible Filler L mm
<400	160	18
400-700	200	36
725-1200	300	36
>1200	300	54

GENERAL NOTES

- All dimensions in millimetres
- 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
- 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
- Where selected excavated material may migrate into the native soil or vice versa, geotextile membrane shall be provided around the embedment material
- 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"
- Embedment dimensions shall be in accordance with Table 2
- PROCESSED GRANULAR MATERIAL:  
Processed granular material shall comply with WIS 4-08-02. The grading of processed granular material shall be as specified
- Limestone material shall not be used where the native ground or ground water is acidic, ie pH of 6 or less
- CONCRETE EMBEDMENTS & SURROUND:  
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
- 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
- Pipes to be bedded/surrounded with concrete shall be supported on precast concrete setting blocks, the top face of each block being covered with two layers of compressible packing
- PVC and PE pipes shall be wrapped with a layer of plastic sheeting complying with UU CESWI 6 class 2.95
- GRP pipes shall be wrapped with compressible filler material 100mm wide at the end of the concrete surround
- Compressible filler shall comply with UU CESWI 6 class 2.19

SUBJECT TO THE APPROVAL OF  
ALL RELEVANT AUTHORITIES

Client	Aldi Stores Ltd.	ALDI
Project Title	Aldi - Whitehaven	
Project Address	Preston Street Whitehaven	

Drawing Title  
Sewer Diversion Details

Job No.	Originator	Zone	Level	Type	Role
79-EXXX 3E	ZZ	XX	DR	C	
System Classification	Drawing No.	Suitability	Revision		
Ro. 50_20_11 -6002	D2	C01			
Drawn	Checked	Date	Scale	Size	
SNK	GS	Jun 2024	NTS	A1	

Newcastle Office  
2 Esch Plaza, Sir Bobby Robson Way  
Great Park, Newcastle upon Tyne  
NE13 9BA

Hydrock

© The copyright of this document, which contains information of a proprietary nature, is vested in United Utilities Water Limited. 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 Limited. Copyright Acknowledgement: Use of Ordnance Survey map data sanctioned by the controller of HM Stationery Office. OS Licence Number 1000191026. Crown copyright reserved. Unauthorised production infringes copyright.

td : 0191 230 2993  
newcastle@seconaut.com