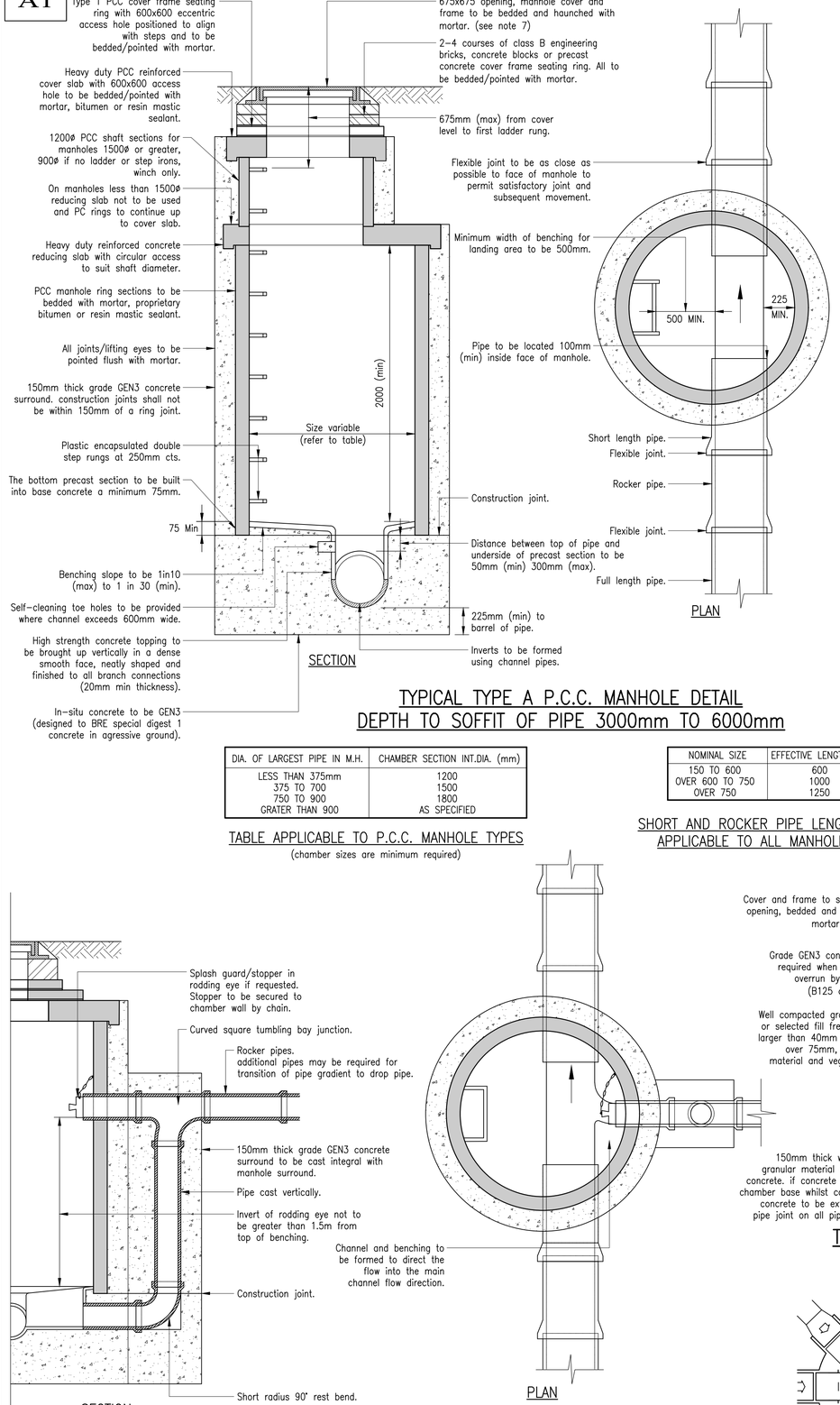
A1



TYPICAL TYPE A P.C.C. MANHOLE DETAIL
DEPTH TO SOFFIT OF PIPE 3000mm TO 6000mm

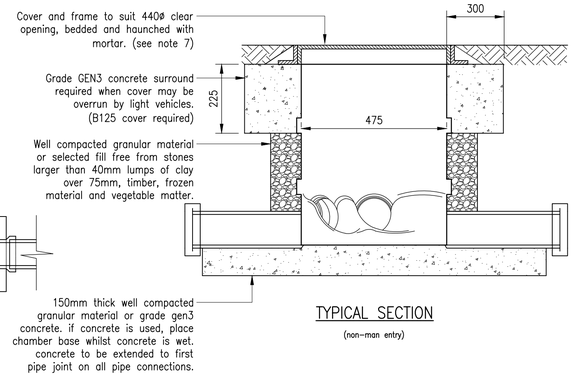
DIA. OF LARGEST PIPE IN M.H.	CHAMBER SECTION INT.DIA. (mm)
LESS THAN 375mm	1200
375 TO 700	1500
750 TO 900	1800
GRATER THAN 900	AS SPECIFIED

TABLE APPLICABLE TO P.C.C. MANHOLE TYPES
(chamber sizes are minimum required)

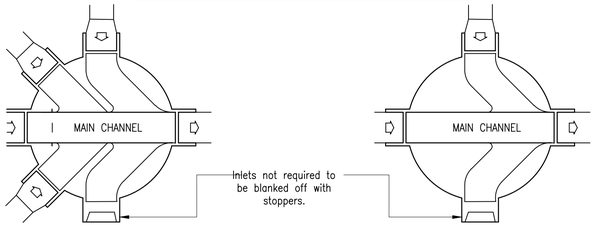
NOMINAL SIZE	EFFECTIVE LENGTH (mm)
150 TO 600	600
OVER 600 TO 750	1000
OVER 750	1250

SHORT AND ROCKER PIPE LENGTHS TABLE
APPLICABLE TO ALL MANHOLE TYPES

TYPICAL VERTICAL BACKDROP MANHOLE DETAIL
(note: construction details as standard PCC manhole)

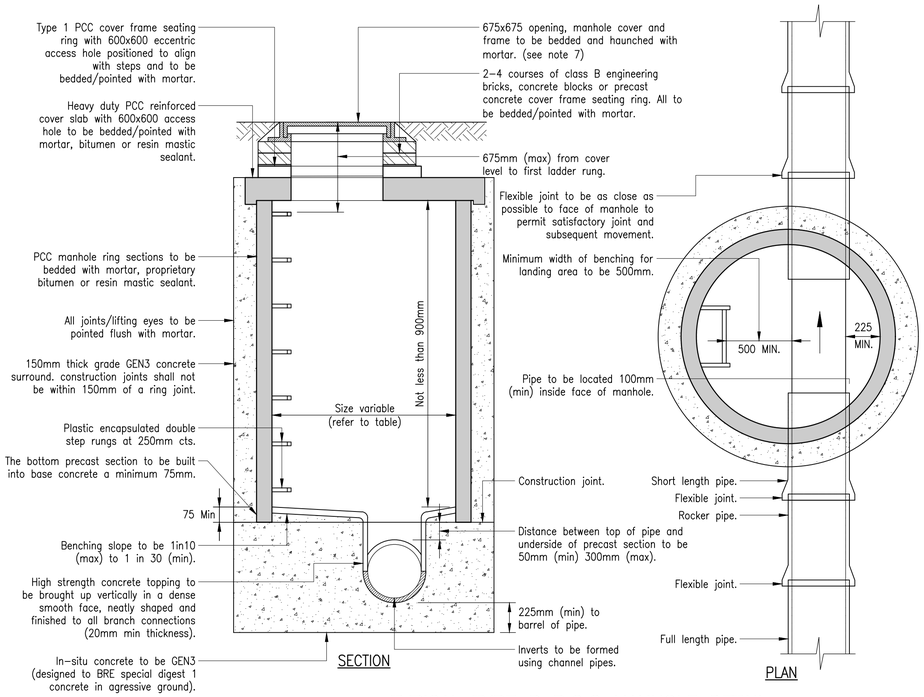


TYPICAL POLYPROPYLENE INSPECTION CHAMBER DETAIL
DEPTH NO GREATER THAN 1200mm

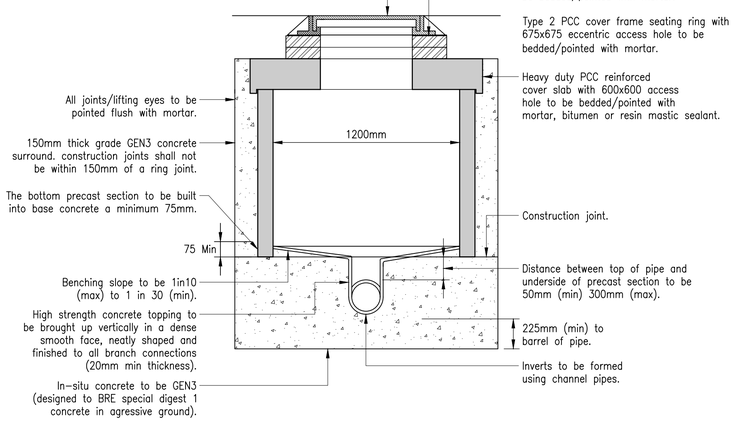


TYPICAL PLAN
6 CONNECTIONS 5 INLETS/1 OUTLET
(100ø)

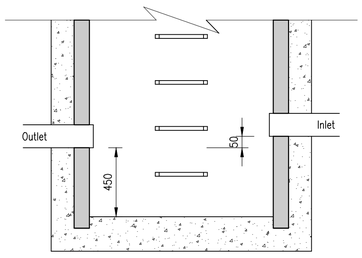
TYPICAL PLAN
4 CONNECTIONS 3 INLETS/1 OUTLET
(150ø)



TYPICAL TYPE B P.C.C MANHOLE DETAIL
DEPTH TO SOFFIT OF PIPE 1500mm TO 3000mm



TYPICAL TYPE E P.C.C. MANHOLE DETAIL
DEPTH TO SOFFIT OF PIPE 1m TO 1.5m
Max sewer diameter 375mm
(non-man entry)



TYPICAL CATCHPIT BASE

DO NOT SCALE.

NOTES –CONT....

12. Where two pipelines cross with less than 300mm cover, surround each pipe with a full concrete bed and surround (class Z detail) for not less than 1m centered on the crossing and extended as required to within 150mm of the nearest flexible joint.
13. Selected backfill material shall consist of uniform soil, free from stones larger than 40mm, clay lumps larger than 75mm, tree roots, contaminated material. Selected backfill material is to be placed in layers not exceeding 150mm thickness. Should the excavated material be unsuitable or weather conditions affect the materials stability, then a suitable hard granular material shall be used.
14. No mechanical compaction of fill material shall be permitted within 300mm above the barrel/crown of the pipe.
15. General backfill to drainage trenches in vehicular trafficked areas above the pipe bedding detail, shall be suitably selected material (in accordance with BS 8301 clause 5.7.6.1.) and be placed in layers not exceeding 225mm, each layer compacted to form a stable trench backfill, should the material be unsuitable or weather conditions affect the materials stability, then a hard granular material shall be used up to formation level.
16. All separators shall be in accordance with the environment agency document PPG3.
17. All below ground plastic/grp tanks shall be installed in accordance with the manufacturers instructions. They shall be provided with sufficient concrete surround to counter floatation and shall have a wall thickness adequate to resist the highest ground water level which could be encountered at their location.
18. All excavations in areas of high water tables and granular materials with high sand/silt contents shall be wrapped with a suitable geotechnical filter membrane to prevent migration of sands/silts. Full height clay stanks across trenches and/or at manhole locations at 25m intervals to restrict water movement along the excavation shall be provided.
19. Where utility/land drainage trenches etc cross over drainage trenches, the contractor shall construct an impermeable barrier to prevent groundwater infiltrating into the drainage trench.
20. Non–man entry access chambers shall comply with the relevant provisions of BS EN 752–3.

Only PDF/DWF Issues of this drawing are controlled. All other formats (eg. DWG AutoCAD FILES) are UN–controlled and are used at your own risk.

This drawing is copyright ©. It is sent to you in confidence and must not be copied, used or disclosed to any third parties without 3E permission. It remains the property of 3E and must be returned on request.

Note for Contractors

This 3E drawing should be considered along with the risk information contained in the CDM Pre Construction Information. This information will include details of the SIGNIFICANT risks which 3E have identified which may arise from constructing the designs shown on this drawing. A competent Contractor should be aware of the typical risks associated with doing this work.

Note for Workers

DO NOT START YOUR WORK unless you know the Risks and Controls relating to the work on this drawing (including SAFE SEQUENCES OF WORK and EQUIPMENT).

STOP

Do not issue copies of parts of this drawing without the above Note for Workers (unless you are sure that the Workers can undertake the work safely).

NOTES –

1. This drawing is to be read in conjunction with all relevant 3E, architect and M&E consultants drawings and project specifications.
2. All building drainage works shall be carried out in accordance with the relevent parts of BS EN 752 'Drains and Sewer Systems Outside Buildings', the current building regulations and the local authority building control specifications and requirements.
3. All insitu and precast concrete products shall comply with class DS1 requirements for sulphate exposure in accordance with BRE Special Digest 1, Concrete in Aggresive Ground (2001) Part 1: Table 2.
4. All precast concrete products shall comply with the relevant provisions of BS 5911 and be Kitemarked. All precast concrete pipes shall be class 120 and comply with the requirements of note 3 above.
5. All vitrified clay pipes and fittings shall comply with the relevant provisions of BS EN295 and BS 65 respectively and be Kitemarked, all pipes shall be extra strength to BS 65 or equivalent BS EN295 pipe crushing strength and be of a sleeved system.
6. All u–PVC pipes and fittings shall comply with WIS 4–35–01 and shall be kitemarked.
7. Manhole covers and frames shall comply with the relevant provisions of BS EN214, have 600x600 clear openings unless otherwise specified and be of non–rocking design without cushion inserts and be Kitemarked. Load class D400 in trafficked areas and load class B125 in footways, landscaped and pedestrian areas. where required, covers shall be recessed to receive the architects specified finish.
8. Gully grates and frames shall comply with the relevant provisions of BS EN:124 and be of non–rocking design with captive hinge access and be Kitemarked. Load class D400 in industrial estate roads and areas carrying regular heavy traffic and load class C250 in estate roads and car parking areas. In all road locations, the grate shall be hinged on the side of the traffic direction (left hand opening).
9. All external rigid pipework shall be laid with a class S pipe bedding detail with 1.2m minimum cover to the pipe barrel under vehicular trafficked areas, 0.9m cover under fields and 0.6m cover under footways/gardens. Where cover is less than that stated, a class A pipe bedding detail shall be used on pipes 225dia and larger, for pipes less than 225dia use a class Z pipe bedding detail. Under buildings a class S pipe bedding detail shall be used. Where there is less than 300mm between the barrel of the pipe and the underside of the structural floor slab, the pipe shall be cast integral with the floor slab with 150mm minimum concrete surround with vertical reinforcement tied into the slab.
10. All u–PVC pipework shall be laid with a class T pipe bedding detail with 1.2m minimum cover to the pipe barrel under vehicular trafficked areas, 0.9m cover under fields and 0.6m cover under footways/gardens. Where cover is less than that stated a class Q pipe bedding detail shall be used.
11. Where concrete protection is required to pipework, the concrete shall be discontinued at each pipe joint over the full cross section of the concrete by means of a shaped compressible filler.

Date	Revisions	Drawn	Rev.
19.06.17	INITIAL ISSUE	JM	P1

4 Calder Close
Calder Park
Wakefield
WF4 3BA

First Floor
Block C
Holland Park
Holland Drive
Newcastle upon Tyne
NE2 4LD

consulting engineers
www.3econsult.com

t 01924 240420
wakefield@3econsult.com

t 0191 230 2993
newcastle@3econsult.com

Client
Aldi Stores Ltd (Goldthorpe North)

Project
Proposed Aldi Store
High Street, Royston

Title
Typical Drainage Details
Sheet 1

Scale	Author	Checked	Date
1:20	JM	ST	June '17

Drawing Status
Preliminary

Job Number	Originator	Zone	Level	Type	Role	Drawing No.	Rev
13690	3E	00	XX	DR	C	1001	P1