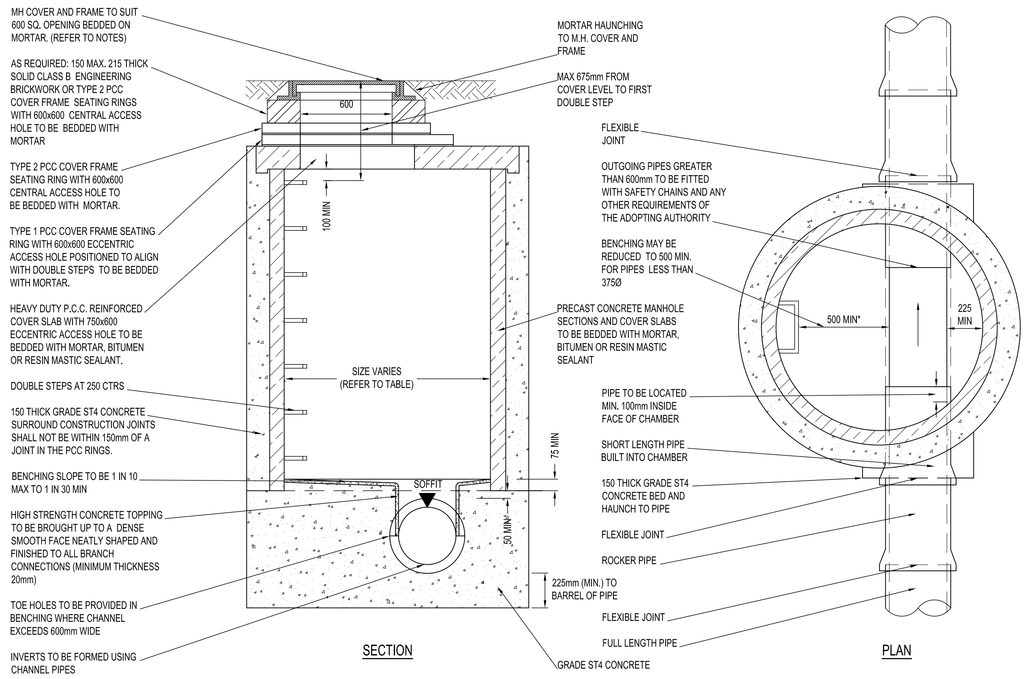



| NOMINAL SIZE | EFFECTIVE LENGTH (mm) |
|---|---|
| 150 TO 600 | 600 |
| 675 TO 675 | 1000 |
| 825 AND ABOVE | 1250 |

SHORT AND ROCKER PIPE LENGTHS APPLICABLE TO ALL MANHOLE TYPES

TYPE B MANHOLE DETAILS MAY BE APPLIED TO TYPE A MANHOLES FOR CHAMBER DIAMETERS LESS THAN 1500Ø & UP TO 6.0m DEPTH TO SOFFIT

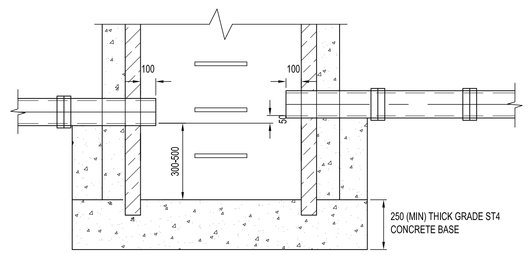
REFER TO STRUCTURAL ENGINEERS DRAWING FOR DETAILS OF MANHOLE COVER LOCATED IN THE GROUND FLOOR SLABS A RECESSED COVERS SHOULD BE USED TO ACCEPT THE ARCHITECTS REQUIRED FINISHES

| DIA. OF LARGEST PIPE IN MH | CHAMBER SECTION INT.DIA. (mm) |
|---|---|
| LESS THAN 375mm | 1200 (1050 WHEN DEPTH TO SOFFIT BETWEEN 1350 TO 1500) |
| 375 TO 450 | 1350 |
| 500 TO 700 | 1500 |
| 750 TO 900 | 1800 |
| 1000 | 2100 |

TABLE APPLICABLE TO MANHOLE TYPES A & B
(CHAMBER SIZES ARE MINIMUM REQUIRED. SEE LAYOUT FOR VARIATIONS, IF ANY)

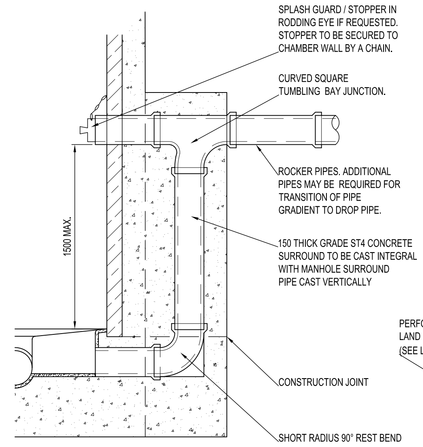
## TYPICAL MANHOLE DETAIL - TYPE B DEPTH TO SOFFIT OF PIPE 1.45 TO 6.00m

(SCALE 1:20)



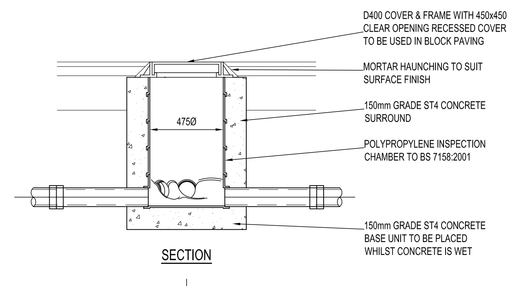

## TYPICAL CATCHPIT MANHOLE DETAIL (PCC RINGS)

(NOTE: CHAMBER TO BE CONSTRUCTION AS STANDARD TYPE B PPC MANHOLE)
(SCALE 1:20)



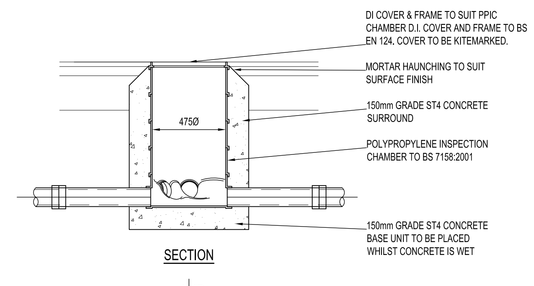

## TYPICAL BACKDROP DETAIL

(SCALE 1:20)



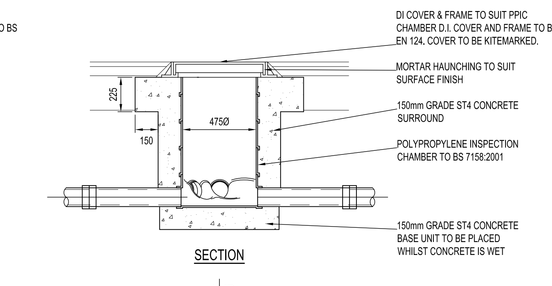

## TYPICAL POLYPROPYLENE INSPECTION CHAMBER IN LIGHTLY TRAFFICKED AREAS DEPTH UP TO 1.200m

(SCALE 1:20)



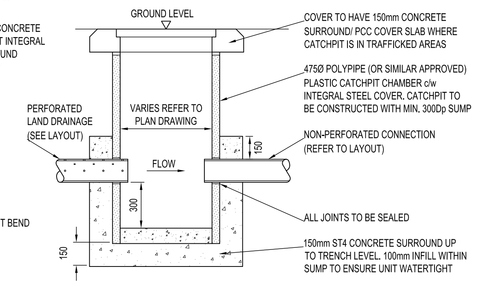

## TYPICAL POLYPROPYLENE INSPECTION CHAMBER IN SOFT LANDSCAPING AND PRIVATE FOOTWAYS DEPTH UP TO 1.200m

(SCALE 1:20)



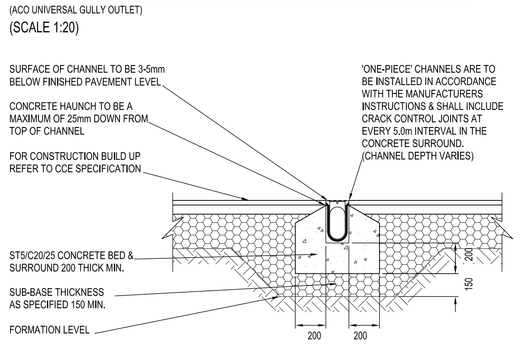

## TYPICAL POLYPROPYLENE INSPECTION CHAMBER IN HEAVY TRAFFICKED AREAS DEPTH UP TO 1.200m

(SCALE 1:20)



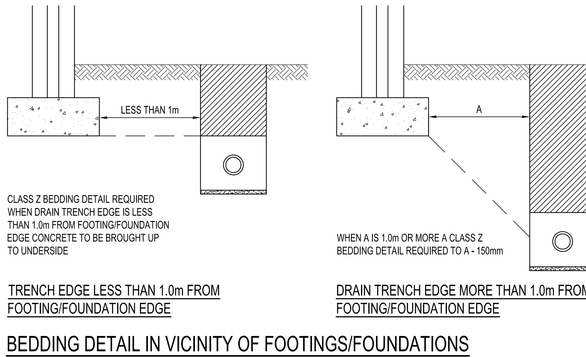

## TYPICAL 475Ø PPIC CATCHPIT DETAIL

(SCALE 1:20)




## TYPICAL SECTION THROUGH DRAINAGE CHANNEL OUTLET

(ACO UNIVERSAL GULLY OUTLET)
(SCALE 1:20)



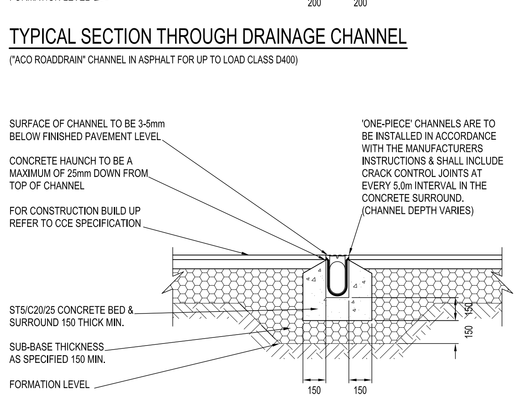

## TYPICAL ROAD GULLY DETAIL

(SCALE 1:20)



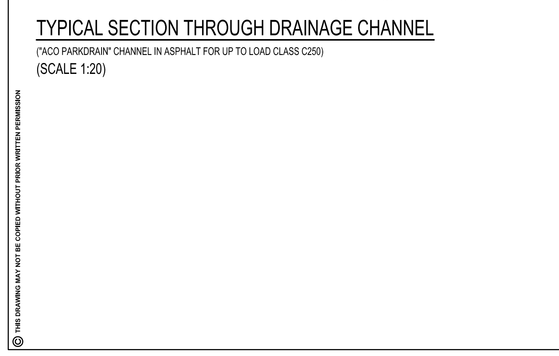

## TYPICAL RODDING EYE DETAIL

(SCALE 1:20)




## TYPICAL SECTION THROUGH DRAINAGE CHANNEL

("ACO ROADDRAIN" CHANNEL IN ASPHALT FOR UP TO LOAD CLASS D400)




## TYPICAL SECTION THROUGH DRAINAGE CHANNEL

("ACO PARKDRAIN" CHANNEL IN ASPHALT FOR UP TO LOAD CLASS C250)
(SCALE 1:20)

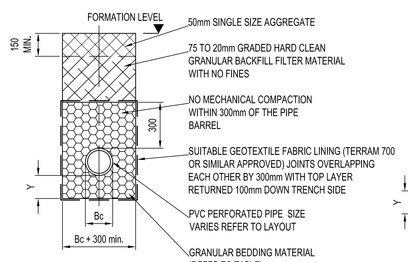



## TRENCH EDGE LESS THAN 1.0m FROM FOOTING/FOUNDATION EDGE

## DRAIN TRENCH EDGE MORE THAN 1.0m FROM FOOTING/FOUNDATION EDGE

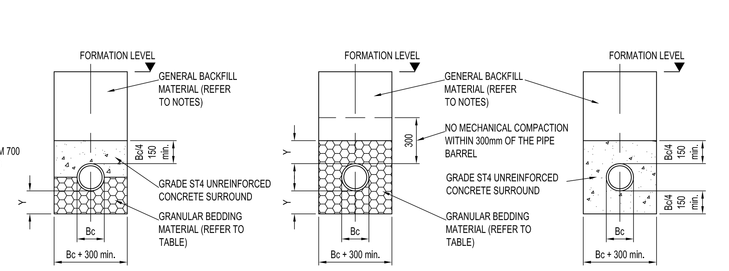
## BEDDING DETAIL IN VICINITY OF FOOTINGS/FOUNDATIONS

(NOTE:- THIS IS A TYPICAL DETAIL TO BE CROSS REFERENCED WITH CCE STRUCTURAL DRAWINGS)
(NOT TO SCALE )




## FILTER DRAIN DETAIL

(REFER TO NOTES)




## CLASS A BEDDING DETAIL

(REFER TO NOTES)

## CLASS S BEDDING DETAIL

(REFER TO NOTES)

## CLASS Z BEDDING DETAIL

(REFER TO NOTES)

| NOMINAL PIPE DIA (mm) | THICKNESS OF COMPRESSIBLE FILLER (mm) |
|---|---|
| LESS THAN 450 | 18 |
| 450 TO 1200 | 36 |
| GREATER THAN 1200 | 54 |

COMPRESSIBLE FILLER TABLE
(BITUMEN IMPREGNATED INSULATING BOARD TO BS 1142: PART 3)

| NOMINAL PIPE DIA (mm) | SINGLE SIZED (mm) | GRADED (mm) |
|---|---|---|
| 150 | 10 OR 14 | 14 TO 5 |
| 200 TO 300 | 10,14 OR 20 | 14 TO 5 OR 20 TO 5 |
| 375 TO 525 | 14 OR 20 | 14 TO 5 OR 20 TO 5 |
| GREATER THAN 525 | 14,20 OR 40 | 14 TO 5, 20 TO 5 OR 40 TO 5 |

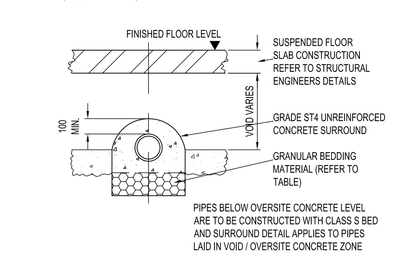
GRANULAR BEDDING MATERIAL
(ALL AGGREGATES TO TABLE 4 OF BS 882 :1983.)

NOTES

A) Bc = OUTSIDE DIAMETER OF PIPE BARREL.

B) Y = FOR UNIFORM SOILS:

SLEEVE JOINTED PIPES, MIN. 50mm OR 1/6Bc, WHICHEVER IS THE GREATER. SOCKETED PIPE, MIN. 100mm OR 1/6Bc, WHICHEVER IS THE GREATER UNDER BARRELS AND NOT LESS THAN 50mm UNDER SOCKETS. FOR ROCK OR MIXED SOILS CONTAINING ROCK BANDS, BOULDERS, STONES OR OTHER IRREGULAR HARD SPOTS: SLEEVE JOINTED PIPES, MIN. 150mm OR 1/4Bc, WHICHEVER IS THE GREATER. SOCKETED PIPE, MIN. 200mm OR 1/4Bc, WHICHEVER IS THE GREATER UNDER BARRELS AND NOT LESS THAN 150mm UNDER SOCKETS.




## CLASS Zx BEDDING DETAIL

(REFER TO NOTES)

## RIGID PIPE TRENCH BEDDING DETAILS

(NOT TO SCALE)

A0 DO NOT SCALE THIS DRAWING. CHECK ALL DIMENSIONS ON SITE. IF IN DOUBT ASK.

## GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP IS TO COMPLY WITH CCE's STANDARD SPECIFICATION AND ALL RELEVANT BRITISH AND EUROPEAN STANDARDS.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, M & E CONSULTANTS AND CCE's DRAWINGS.
3. ANY DISCREPENCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO COMMENCEMENT OF WORKS.

## DRAINAGE DETAILS

1. ALL INSITU AND PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS8500 AND BRE SPECIAL DIGEST 1 FOR SULPHATE EXPOSURE. FOR THE EXPOSURE CLASS REFER TO THE RECOMMENDATIONS OUTLINED IN THE SITE INVESTIGATION.
2. PRECAST CONCRETE PRODUCTS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS 5911:2002, BS EN 1916:2002 AND BS EN 1917:2002 AND BE KITE MARKED. CONCRETE PIPES TO BE CLASS 120 UNLESS NOTED OTHERWISE.
3. VITRIFIED CLAY PIPES AND FITTINGS SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 295 AND BS 65 RESPECTIVELY AND BE KITE MARKED. ALL PIPES SHALL BE CLASS 120 TO BS EN 295.
4. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE RELEVANT PROVISIONS OF BS EN 124, HAVE 600x600 CLEAR OPENINGS UNLESS OTHERWISE SPECIFIED AND BE OF NON-ROCKING DESIGN WITHOUT CUSHION INSERTS AND BE KITE MARKED. 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.
5. 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 KITE MARKED. 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).
6. ALL EXTERNAL PIPEWORK TO BE LAID WITH CLASS S PIPE BEDDING DETAIL WITH 1200mm MINIMUM COVER TO THE PIPE BARREL UNDER VEHICULAR TRAFFICKED AREAS. 900mm COVER UNDER LANDSCAPING AND 600mm COVER UNDER FOOTWAYS UNLESS OTHERWISE NOTED ON THE DRAINAGE LAYOUT. WHERE COVER IS LESS THAN THAT STATED ABOVE, 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 PIPES ARE LAID WITHIN THE VICINITY OF FOOTINGS/FOUNDATIONS CLASS Z BEDDING TO BE USED - REFER TO DETAIL DWG.
7. 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.
8. 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 1000mm CENTERED ON THE CROSSING AND EXTENDED AS REQUIRED TO WITHIN 150mm OF THE NEAREST FLEXIBLE JOINT.
9. NO MECHANICAL COMPACTION OF FILL MATERIAL SHALL BE PERMITTED WITHIN 300mm ABOVE THE BARREL/CROWN OF THE PIPE.
10. UNDER TRAFFICKED AREAS BACKFILL ABOVE THE PIPE BEDDING MATERIAL SHALL BE IMPORTED HARD CLEAN GRANULAR MATERIAL UP TO FORMATION LEVEL. (IE CRUSHED ROCK) ALL CRUSHED ROCK TO BE USED IN BACKFILL SHALL MEET THE FOLLOWING GRADE:-

| | |
|---|---|
| 125mm SIEVE | 100% PASSING |
| 100mm SIEVE | 85% - 100% PASSING |
| 37.5mm SIEVE | 0% - 10% PASSING |

IMPORTED GRANULAR BACKFILL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 225mm (LAYER THICKNESS TO BE DETERMINED BY THE CONTRACTOR TO SUIT COMPACTION PLANT, NUMBER OF PASSES, MATERIAL CLASSIFICATION AND LAYER THICKNESS ETC). EACH LAYER IS TO BE COMPACTED TO FORM A STABLE TRENCH BACKFILL.

11. UNDER LANDSCAPING AREAS BACKFILL ABOVE THE PIPE BEDDING MATERIAL SHALL BE SUITABLY SELECTED MATERIAL CONSISTING OF UNIFORM SOIL, FREE FROM STONES LARGER THAN 40mm, CLAY LUMPS LARGER THAN 75mm, TREE ROOTS, ORGANIC MATTER AND FROZEN SOIL. 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 UP TO FORMATION LEVEL.
12. ALL PLASTIC PIPES, BENDS AND JUNCTIONS SHALL BE GREY OR BROWN COLOURED PVC-U WITH FLEXIBLE JOINTS ALL TO BS EN : 1401-1:2009 AND BS4660 AND BE KITE MARKED. FOUL WATER 1100 AND 1500 TO BE OSMA DRAIN. 225Ø AND 300Ø PIPES SHALL BE ULTRA-RIB PVC-U TO WIS 4-35-01 AND WATER INDUSTRY CERTIFIED (WAVIN/ OSMA OR SIMILAR APPROVED)
SURFACE WATER SHALL BE THERMOPLASTIC STRUCTURED TWIN WALL PIPES SIZES 150Ø TO 600Ø TO WIS 4-35-01 AND WATER INDUSTRY CERTIFIED
(NOTE PLASTIC PIPE ARE NOT PERMITTED ABOVE 600Ø)
13. ALL PERFORATED PLASTIC PIPES SHALL COMPLY WITH BS 4962 AND BE KITE MARKED.
14. ALL RUBBER PIPE SEALS SHALL BE EPDM MATERIAL AND COMPLY WITH BS EN681.

| Rev | Date | By | Description | Chk | App |
|---|---|---|---|---|---|
| A | 28.07.2016 | JDM | CONSTRUCTION ISSUE | JDM | PC |

Drawing Status: CONSTRUCTION

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Project: HIGHSTONE ROAD BARNSLEY

Client: SOUTH YORKSHIRE HOUSING ASSOCIATION

Dwg Title: STANDARD DRAINAGE DETAILS

| Scale | Date | Drawn | Checked | Approved |
|---|---|---|---|---|
| AS SHOWN @ A0 | Jul-16 | JDM | JDM | PC |

Path: Z:\Projects\16000 - Highstone Road, Barnsley\4.0 Drawings\4.2 CAD\4.2.1 - CAD

| Project No | Dwg No | Rev |
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| 16006 | D2001 | A |

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