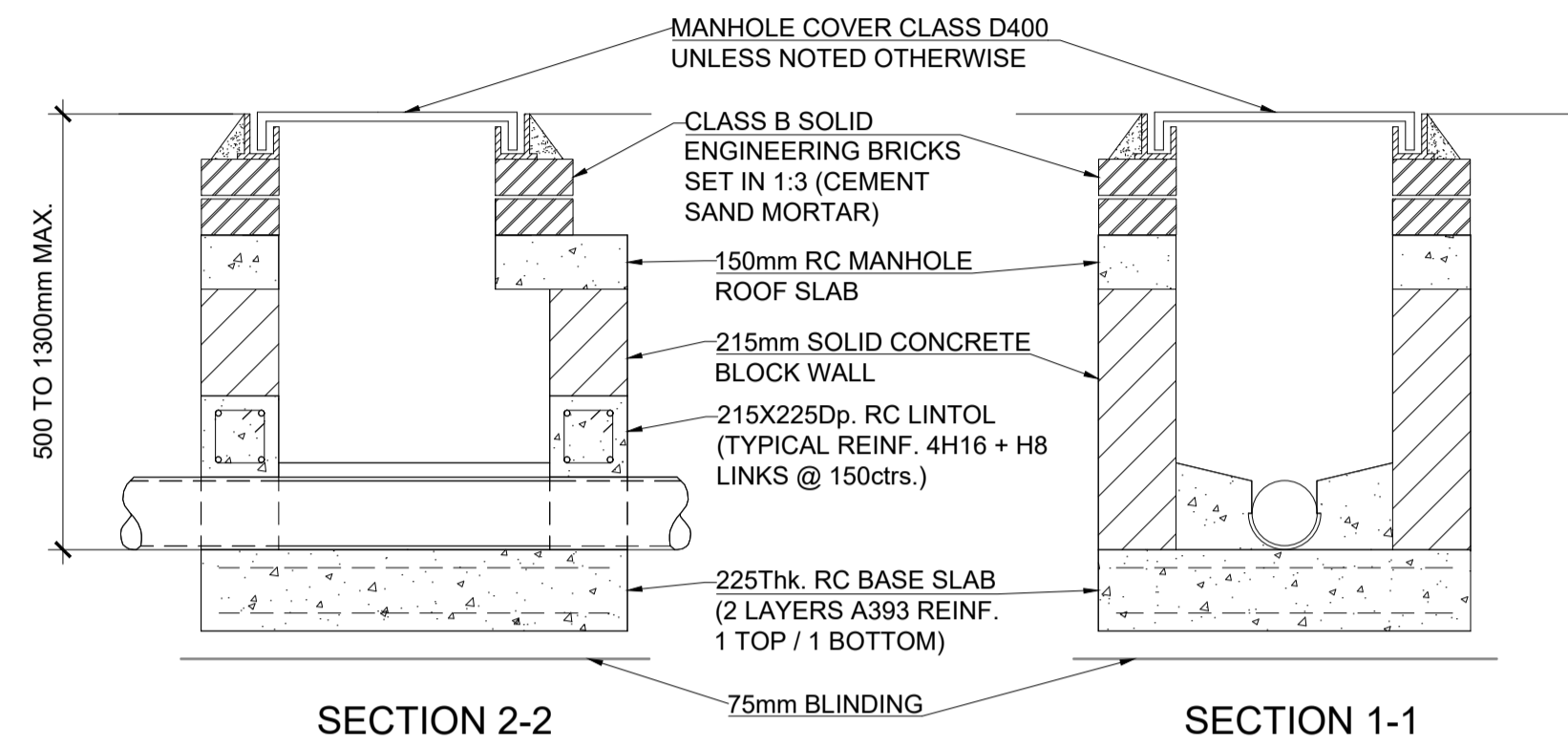
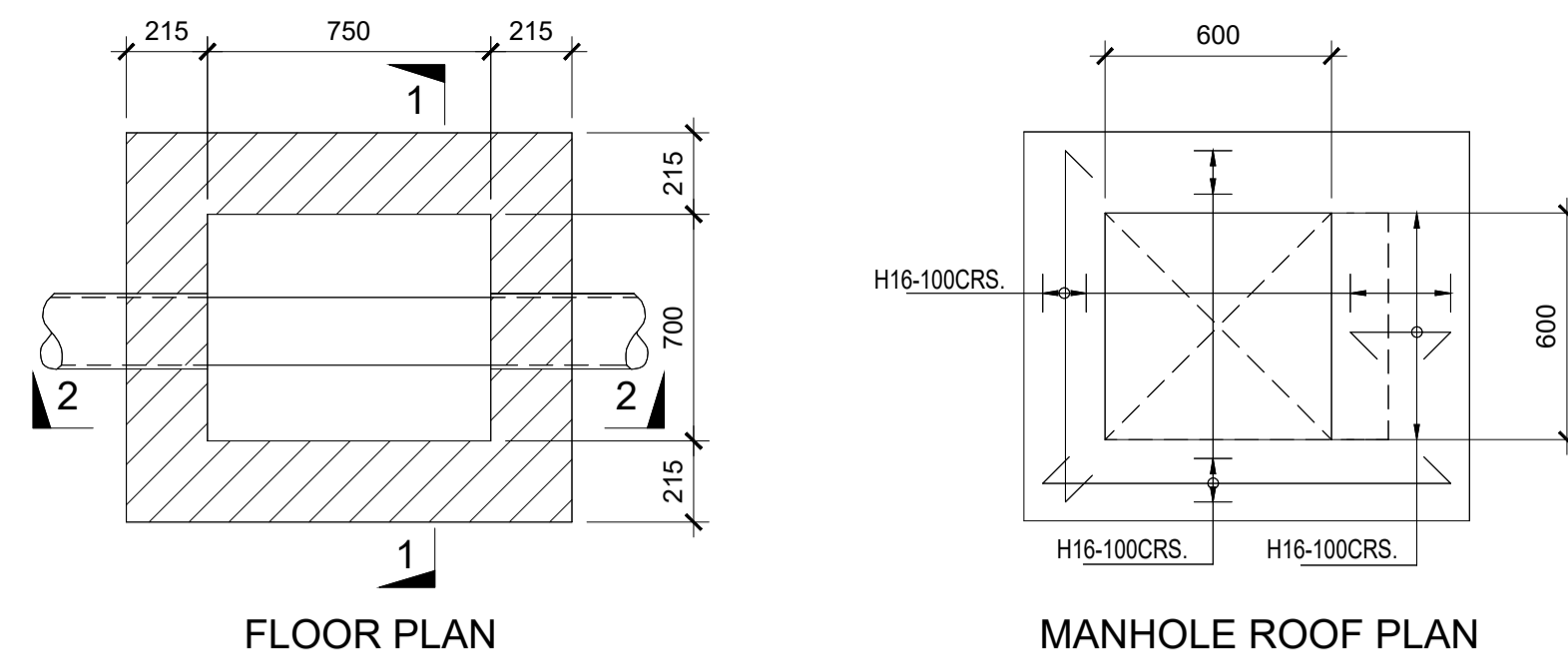
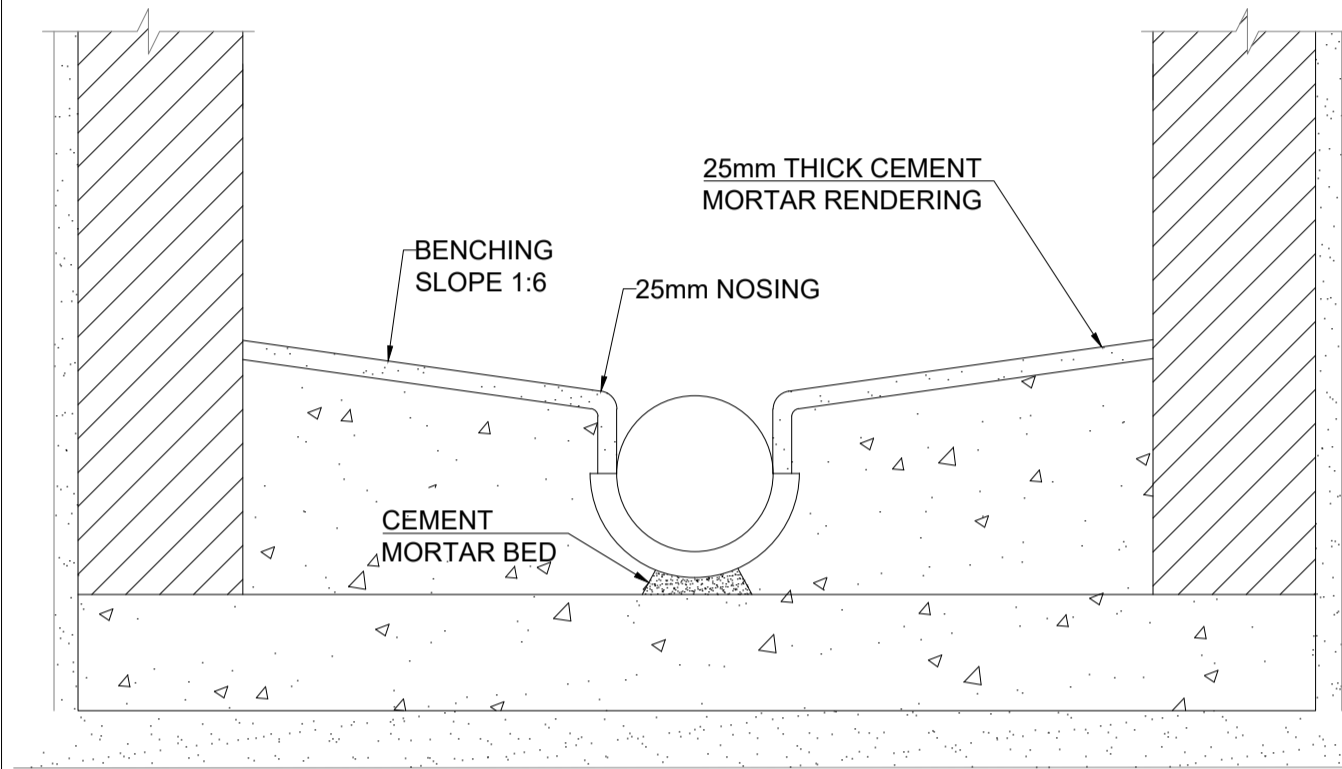


**BLOCKWORK MANHOLE NOTES:**

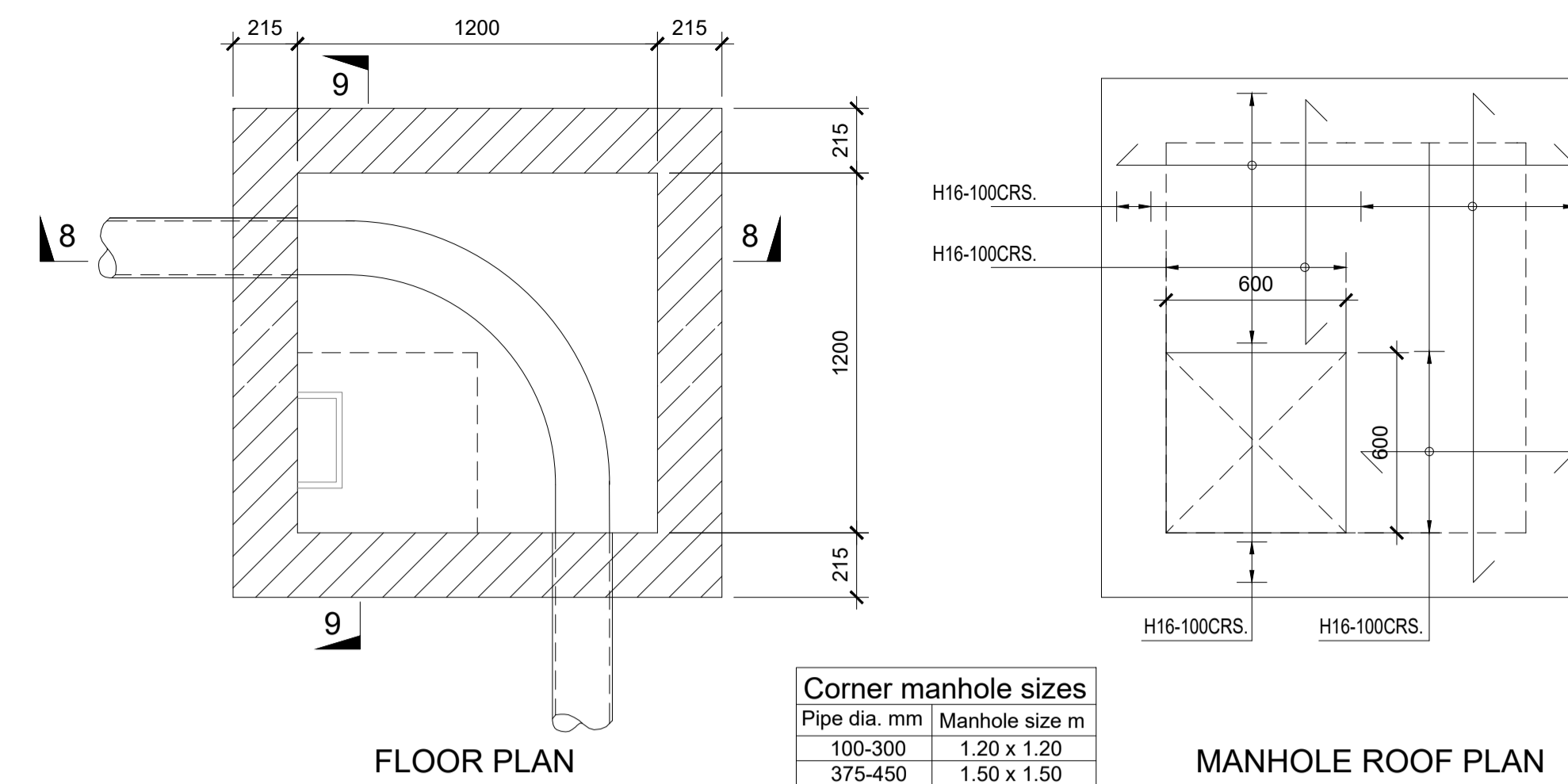
- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- FOUL & SURFACE WATER MANHOLES TO BE CONSTRUCTED IN ACCORDANCE WITH CURRENT BUILDING REGULATIONS PART H AND RELEVANT AGREEMENT CERTS.
- FOUL, SURFACE WATER & WATERMAIN MANHOLES IN ROADS (OUTSIDE OPW SITE) TO BE IN COMPLIANCE WITH CURRENT IRISH WATER DETAILS & CODE OF PRACTICE.
- ALL ROADWORKS TO BE IN COMPLIANCE WITH CURRENT TII SPECIFICATION & CODE OF PRACTICE FOR ROADWORKS.
- ACCESS POINTS SHOULD BE LOCATED SO THAT THEY ARE ACCESSIBLE AND APPARENT TO THE MAINTAINER AT ALL TIMES FOR USE.
- MANHOLES TO BE CONSTRUCTED IN SOLID CONCRETE BLOCKWORK TO IS 20 TYPE S5 MIN. 215mm WALL THICKNESS. A FURTHER "ROCKER" PIPE SHALL ALSO BE PROVIDED FOR PIPES UP TO 450mmØ OF 500mm TO 750MM IN LENGTH.
- MANHOLE COVERS AND FRAMES TO COMPLY WITH THE REQUIREMENTS OF IS EN 124-1994. COVERS IN ROADWAYS TO BE AN APPROVED MINIMUM CLASS D400 WITH 600mm CLEAR OPENING SET IN 1:3 (CEMENT SAND MORTAR). COVERS IN GRASSED AREAS AND FOOTPATHS NOT ADJACENT TO ROADWAYS TO BE MINIMUM CLASS C250 WITH 600mm CLEAR OPENING.
- MANHOLE STEPS TO COMPLY WITH IS EN 13101, TYPE D, CLASS 1, GALVANISED MILD STEEL & PLASTIC ENCAPSULATED. STEPS ARE REQUIRED IN MANHOLES UP TO A GROUND TO PIPE SOFFIT DEPTH OF LESS THAN 3.3m.
- BENCHING IS TO BE FORMED IN GRADE 30 CONCRETE AND SHOULD RISE VERTICALLY FROM THE TOP EDGE OF THE CHANNEL TO A HEIGHT NOT LESS THAN THAT OF THE SOFFIT OF THE OUTLET AND SLOPE UPWARDS TO MEET THE WALL OF THE MANHOLE AT A GRADIENT OF 1:6 (MIN RISE 25mm). IT SHOULD BE FLOATED WITH A STEEL FLOAT TO A SMOOTH HARD SURFACE WITH A 25mm THICK COAT OF 1:1 CEMENT MORTAR LAID WHILE THE BENCHING CONCRETE IS STILL GREEN.
- FOUL MANHOLES SHALL BE RENDERED INTERNALLY IN 1:3 CEMENT MORTAR.
- SEWERS GREATER THAN 450mmØ ARE OUTSIDE THE SCOPE OF THESE STANDARD DETAILS.



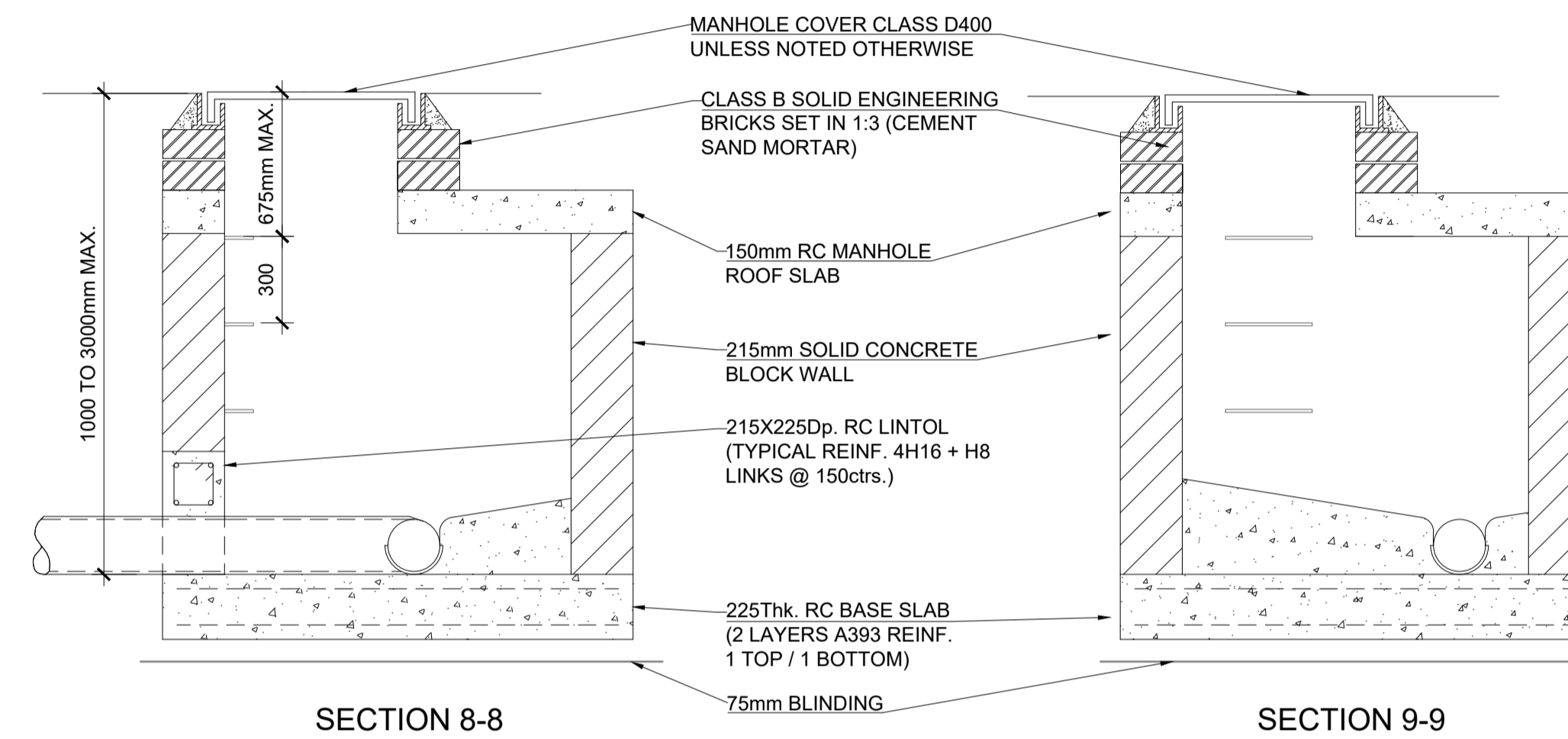
**CE\_D001 BLOCKWORK MANHOLE UP TO 1300mm DEEP**  
Scale 1:20



**CE\_D006 BENCHING DETAIL**  
Scale 1:10

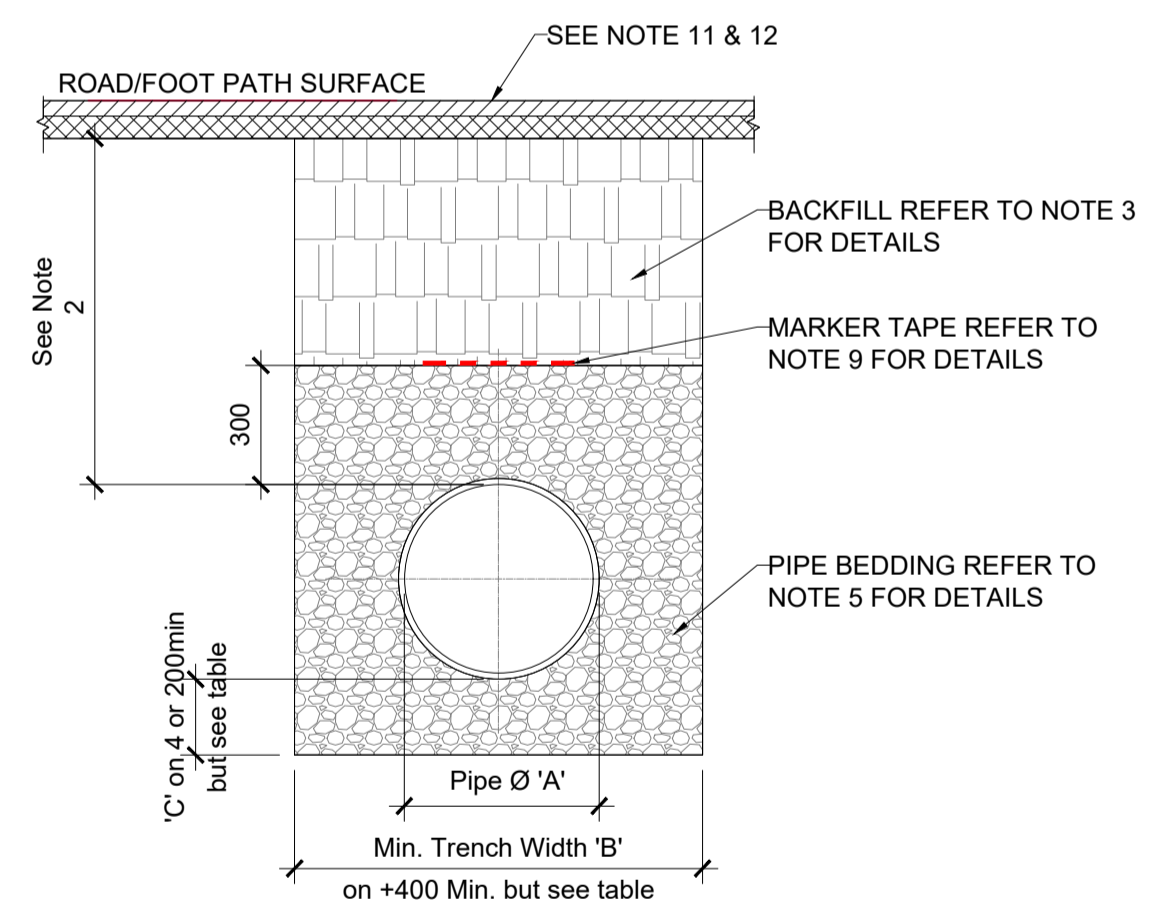


Corner manhole sizes	
Pipe dia. mm	Manhole size m
100-300	1.20 x 1.20
375-450	1.50 x 1.50

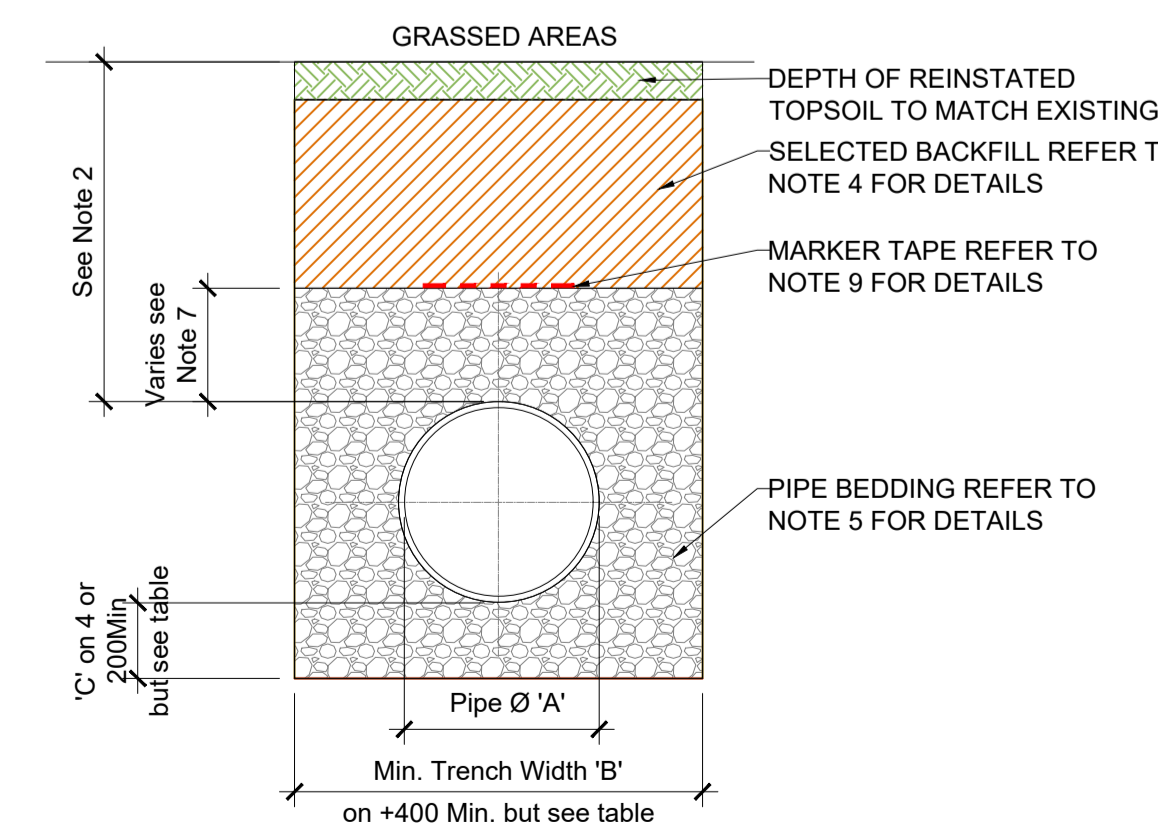


**CE\_D005 BLOCKWORK CORNER MANHOLE**  
Scale 1:20

- ALL DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE.
- THE MINIMUM DEPTH OF COVER FROM THE FINISHED SURFACE TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS:
  - GRASSED AREAS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.6m.
  - DRIVEWAYS, PARKING AREAS AND YARDS - DEPTH NOT LESS THAN 0.9m.
- CLAUSE 804/808 MATERIAL IN ACCORDANCE WITH THE TII SPECIFICATION FOR ROADWORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE SEWER MAIN IS LOCATED IN ROADS, FOOTPATHS OR WHEN THE NEAREST PART OF THE TRENCH IS WITHIN 1m OF THE PAVED EDGE OF THE ROADWAY. CLAUSE 804/808 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE TII SPECIFICATION FOR ROADWORKS. CLAUSE 808 IS TO BE USED WITHIN 500mm OF CEMENT BOUND MATERIALS, CONCRETE PAVEMENTS, CONCRETE STRUCTURES OR CONCRETE PRODUCTS. OTHERWISE CLAUSE 804 MAY BE USED.
- SELECTED EXCAVATED MATERIAL COMPLYING WITH THE REQUIREMENTS OF "ACCEPTABLE MATERIAL" AS OUTLINED ON CLAUSE 601 OF THE TII SPECIFICATION FOR ROADWORKS, TABLE 6/1, CLASS 8, CLASS 2, MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY OPW CIVIL AND STRUCTURAL ENGINEERING.
- PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01. GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE TO IS EN 13242. CONCRETE BED, HAUNCH & SURROUND WHERE REQUIRED SHALL BE TO DRG. OPW-WW-08.
- IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE EXCAVATED AND DISPOSED OF IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 808 MATERIAL IN ACCORDANCE WITH THE TII SPECIFICATION FOR ROADWORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING. ALTERNATIVELY, SPECIAL PIPE SUPPORT ARRANGEMENTS, INCLUDING PILING ETC. MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE SUBJECT TO ASSESSMENT BY THE OPW CIVIL AND STRUCTURAL ENGINEERING BEFORE ADVANCING WITH THE WORK.
- IN GREEN FIELD AREAS, TYPE B BACKFILL (SELECTED EXCAVATED MATERIAL COMPLYING WITH THE REQUIREMENTS OF "ACCEPTABLE MATERIAL" AS OUTLINED ON CLAUSE 601 OF THE TII SPECIFICATION FOR ROADWORKS, TABLE 6/1, CLASS 8, CLASS 2.) WILL BE ALLOWED ABOVE THE SIDE HAUNCH GRANULAR MATERIAL IN THE CASE OF RIGID PIPES. A GRANULAR SURROUND OF A MINIMUM, DEPTH OF 150mm ABOVE THE CROWN OF THE PIPE IS REQUIRED FOR FLEXIBLE PIPES AND TYPE B MATERIAL MAY BE USED AS BACKFILL ABOVE THIS. ALL RISING MAINS IN GREENFIELD AREAS SHALL HAVE A MINIMUM COVER OF 300mm OF GRANULAR MATERIAL ABOVE THE EXTERNAL CROWN OF THE PIPE.
- PIPES SHALL NOT BE SUPPORTED ON STONES, ROCKS, OR ANY HARD OBJECTS AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 808 MATERIAL IN ACCORDANCE WITH THE TII SPECIFICATION FOR ROADWORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
- NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT THE TOP OF PIPE BEDDING LAYER FOR SEWERS AND RISING MAINS. IT SHOULD RUN CONTINUOUSLY AROUND MANHOLES.
- TRENCH WIDTHS FOR PIPE SIZES ≤80mm MAY BE ≤500mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO OPW REQUIREMENTS.
- EXISTING ROAD REINFORCEMENT TO COMPLY WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT. OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS



**CROSS SECTION IN ROADS**



**CROSS SECTION IN GRASSED AREAS**

**CE\_D030 TRENCH BACKFILLING & BEDDING DETAILS**  
Scale 1:20

PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
80 RISING MAIN	SEE NOTE 10.
100	500
150 - 200	600
>200 - 350	750
>350 - 450	900

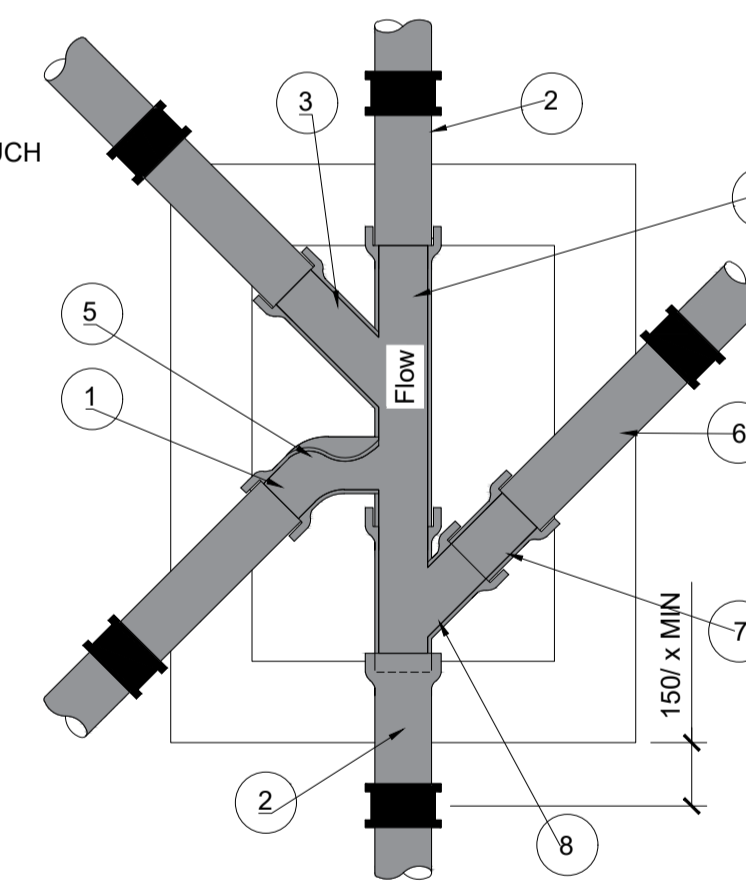
PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
100	100
150 - 450	200

**PIPE MATERIALS**

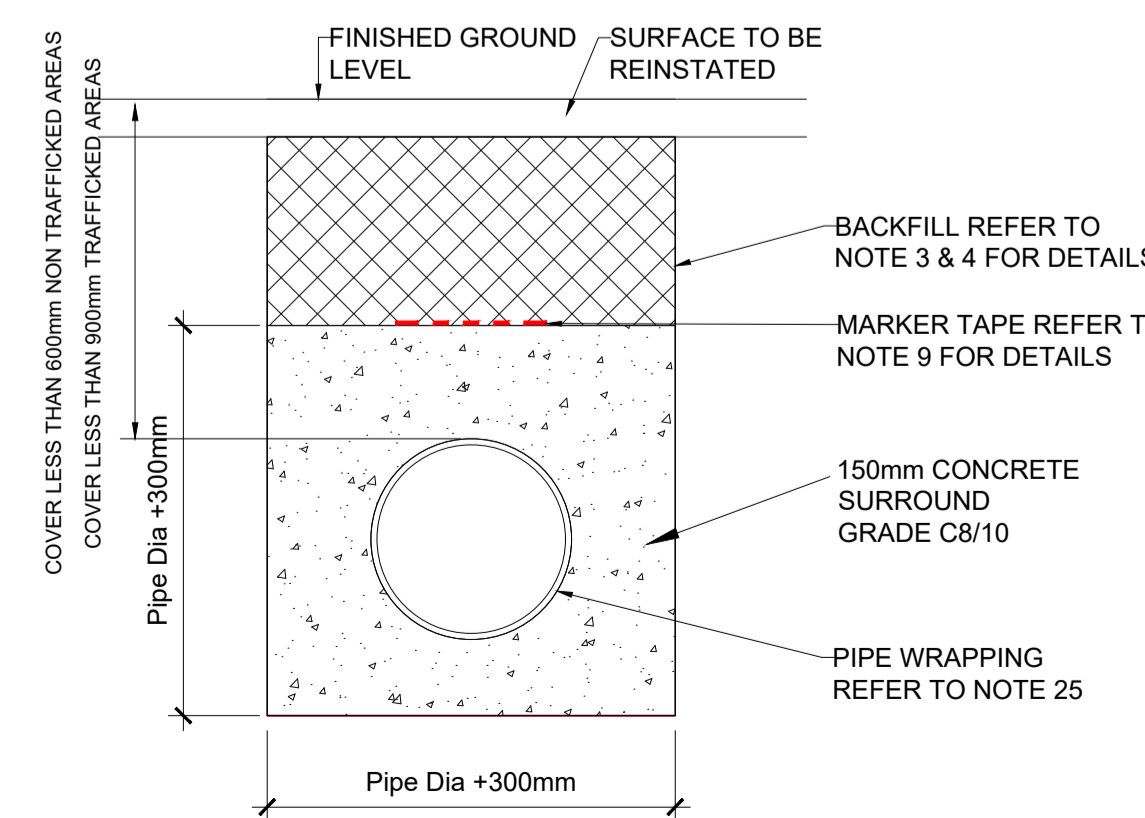
UNLESS SPECIFICALLY NOTED OTHERWISE IN THE DRAINAGE LAYOUT THE PIPE MATERIAL WILL BE AS FOLLOWS:  
 PIPE DIAMETER ≤ 100mm AND UP TO 375mm: USE uPVC PIPE WORK  
 PIPE DIAMETER >375mm: USE CONCRETE PIPE WORK.

- PIPE MATERIAL TO BE IN ACCORDANCE WITH THE FOLLOWING:
- CONCRETE PIPES TO HAVE SPIGOT & SOCKET JOINTS AND RUBBER RING FITTINGS TO IS EN 1916 (2002); BS5911, PART 1, (2002-2010) AND IS 6 (2004), STRENGTH CLASS 120
  - VITRIFIED CLAY PIPES & FITTINGS TO COMPLY WITH IS EN 295- 1/2/3 CLASS 160 OR CLASS 200
  - uPVC PIPES, JOINTS AND FITTINGS TO COMPLY WITH THE PROVISION OF IS EN 1401 PART 1 AND BS 4660

- ANGLES OVER 90° ARE NOT PREFERRED, IN SUCH CASES 3/4 SECTION BENDS MUST BE USED.
- SHORT LENGTH OF PIPE (ROCKER PIPE)
- 1/2 SECTION BEND.
- CHANNEL PIPE (ROCKER PIPE)
- 3/4 SECTION BEND.
- SHORT LENGTH PIPE (ROCKER PIPE)
- SHORT SECTION OF CHANNEL PIPE.
- RIGHT HAND CHANNEL JUNCTION.



**CE\_D007 TYPICAL CHANNEL DETAILS AROUND MANHOLE**  
Scale: 1:20



**CE\_D031 SHALLOW TRENCH DETAIL**

**General Notes:**

- Refer to drawing 2889-DR-001 & 2889-DR-002 for General Notes.
- This drawing is to be read in conjunction with all other Engineers, Architects and Suppliers drawings, specifications and Risk Assessments.
- The Contractor shall notify the OPW Project Engineer (C&S) of any discrepancies between drawings, the specification and site conditions and seek clarification before implementing the work.
- Figured dimensions only to be taken from this drawing, do not scale. All setting out, levels and dimensions shall be established from the Architects drawings. As built dimensions and levels shall be confirmed on site where necessary.
- The Contractor is responsible for the design of all Temporary Works to safely execute the permanent works shown on these drawings.
- All dimensions are in millimeters unless noted otherwise. All levels are structural levels in meters Ordnance datum (m OD), unless noted otherwise.
- All work is to conform with the requirements of the latest editions of the Building Regulations, Health and safety Regulations and all codes of practice and standards referenced.
- All work shall be in compliance with the Planning Permission conditions for the project.
- All services shown are indicative only, the contractor must verify all underground services prior to any excavation taking place on site.
- All surfaces to be reinstated after works to match existing ground.

PO	11/08/22	DH	EC	Issued for Information
Revision	Date	By	Chk'd	Description

**Civil & Structural Engineering**  
 Assistant Chief Engineer: Kieran Walsh  
 Grade 1 Engineer: Tim McDonnell  
 Project Engineer: Enda Cusack



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 w: www.gov.ie/opw

Project Title:  
**Trim Market Centre Refurbishment**  
 Castle Street, Trim,  
 Co.Meath

Drawing Title:  
**Drainage Details**  
 Sheet 1

Project Role: Civil & Structural	OPW Section Project Reference: 2889
Scales at A1: As Shown	
Drawn: DH	Checked: EC
Approved: TmCD	Date: 11/08/22
Status Description: Preliminary	Revision: PO
Drawing Number: 2889-DR-4001	