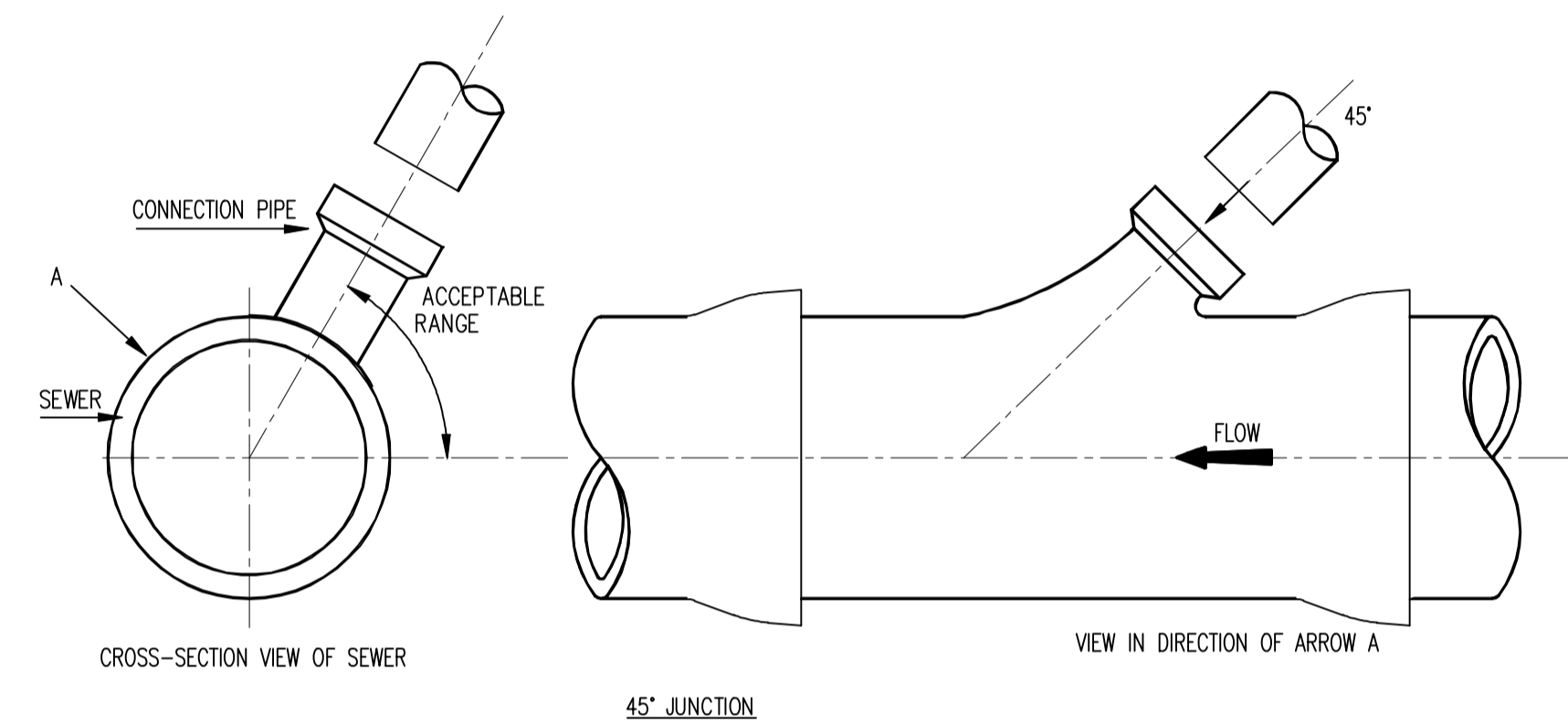
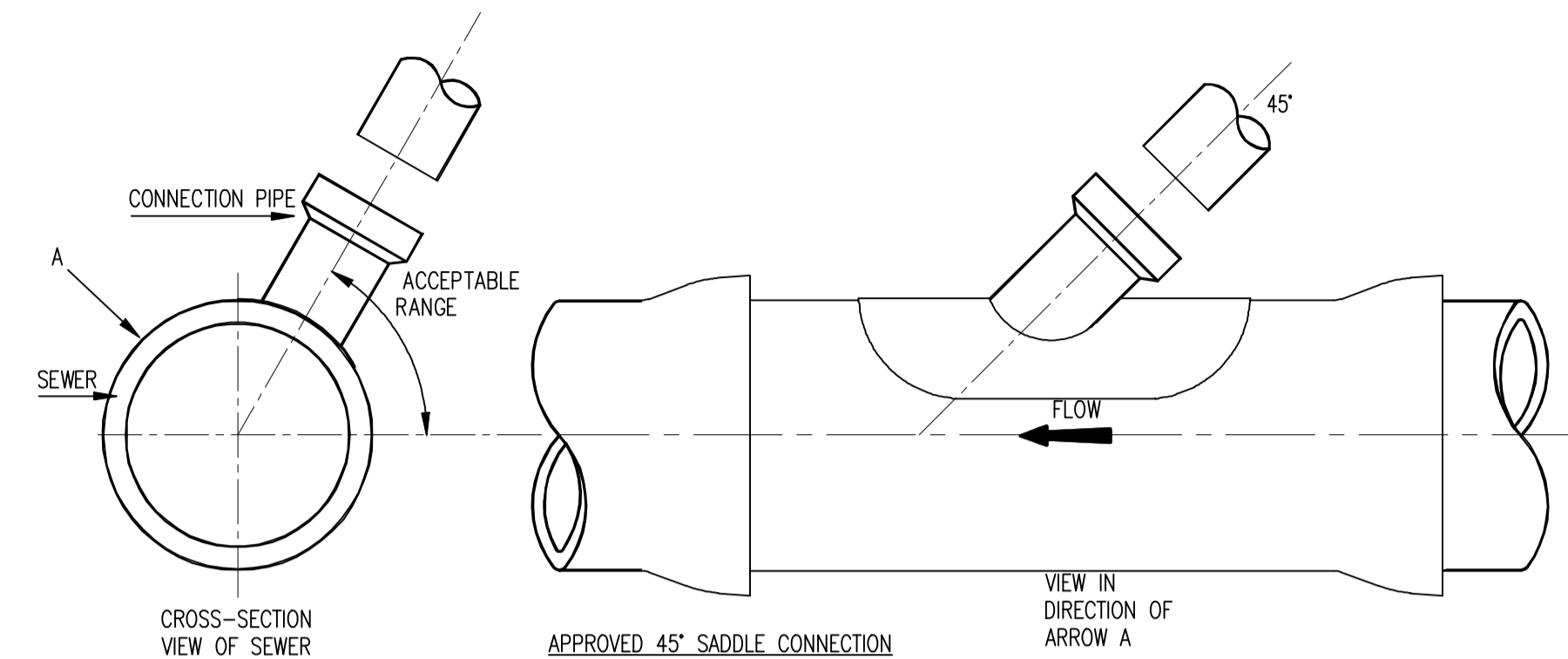
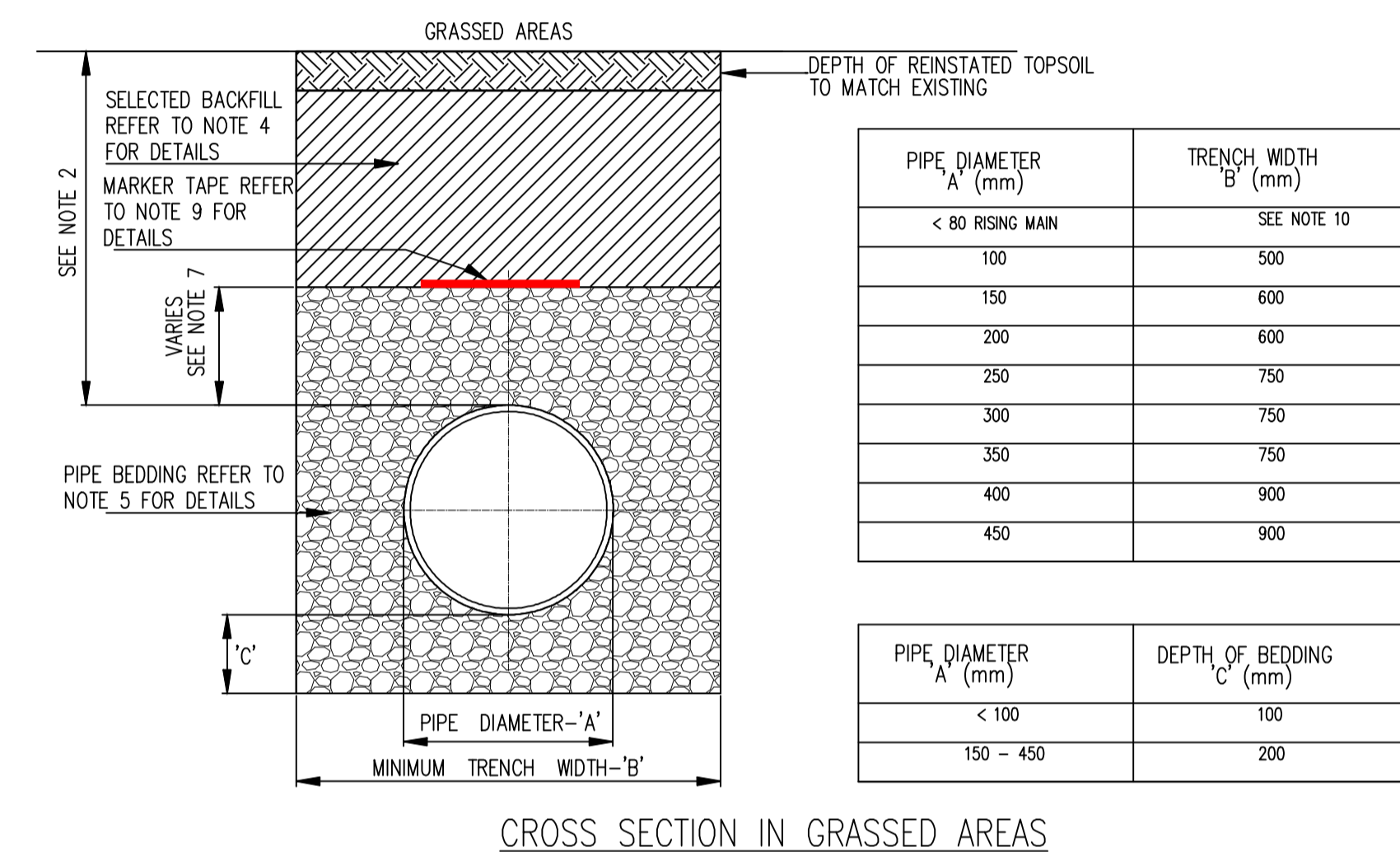
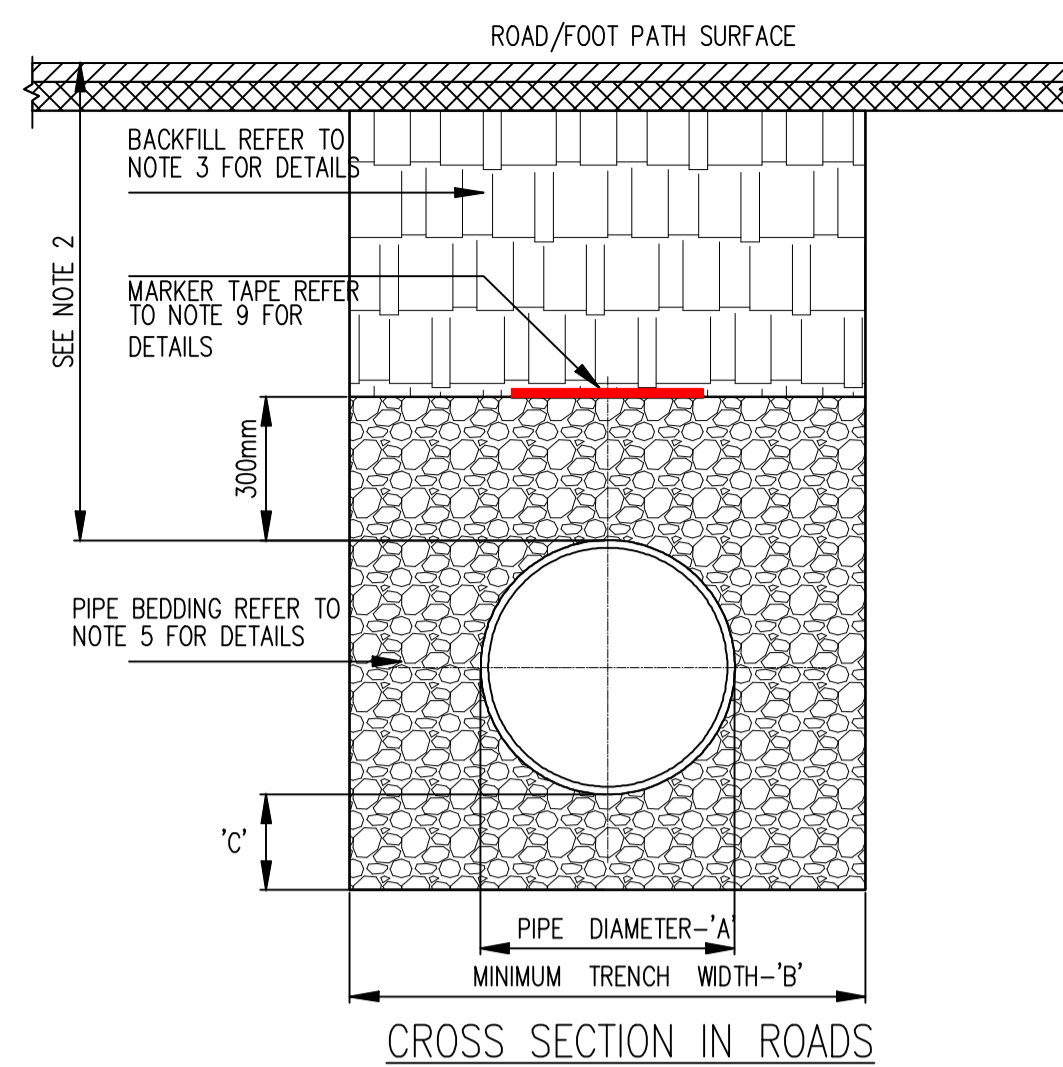


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS(mm) UNLESS NOTED OTHERWISE.
2. AS FAR AS PRACTICABLE, JUNCTIONS AND SERVICE CONNECTIONS SHALL BE BUILT IN FOR ALL PLANNED USERS WHEN THE SEWER IS BEING CONSTRUCTED. WHERE IT IS NECESSARY TO MAKE A POST-CONSTRUCTION CONNECTION THE DEVELOPER SHALL BRING THE SEWER TO THE INSPECTION CHAMBER, INSTALL THE INSPECTION CHAMBER AND SEAL THE UPSTREAM END UNTIL THE CONNECTION IS REQUIRED.
3. THE VERTICAL ANGLE BETWEEN THE SERVICE CONNECTING PIPE & THE HORIZONTAL SHALL BE GREATER THAN 0° AND NOT MORE THAN 60°.
4. WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER OF 300mm DIAMETER OR LESS, CONNECTION SHALL BE MADE USING 45° ANGLE JUNCTIONS.
5. WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER GREATER THAN 300mm
 - a. IF THE DIAMETER OF THE CONNECTING PIPE IS GREATER THAN HALF THE DIAMETER OF THE SEWER, AN ACCESS MANHOLE SHALL BE CONSTRUCTED TO FORM THE CONNECTION POINT. OR
 - b. IF THE DIAMETER OF THE CONNECTING PIPE IS LESS THAN OR EQUAL TO HALF THE DIAMETER OF THE SEWER, THEN THE CONNECTION SHALL BE MADE USING A PREFORMED SADDLE FITTING WITH A SLOW BEND BETWEEN THE SADDLE AND THE CONNECTING SEWER/DRAIN.
6. CONNECTIONS MADE WITH SADDLE FITTINGS SHALL BE MADE BY CUTTING AND SAFELY REMOVING A CORE FROM THE PIPE AND JOINING THE SADDLE FITTING TO THE PIPE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO ENSURE A WATER TIGHT JOINT. THE CONNECTING PIPE SHALL NOT PROTRUDE INTO THE SEWERS.



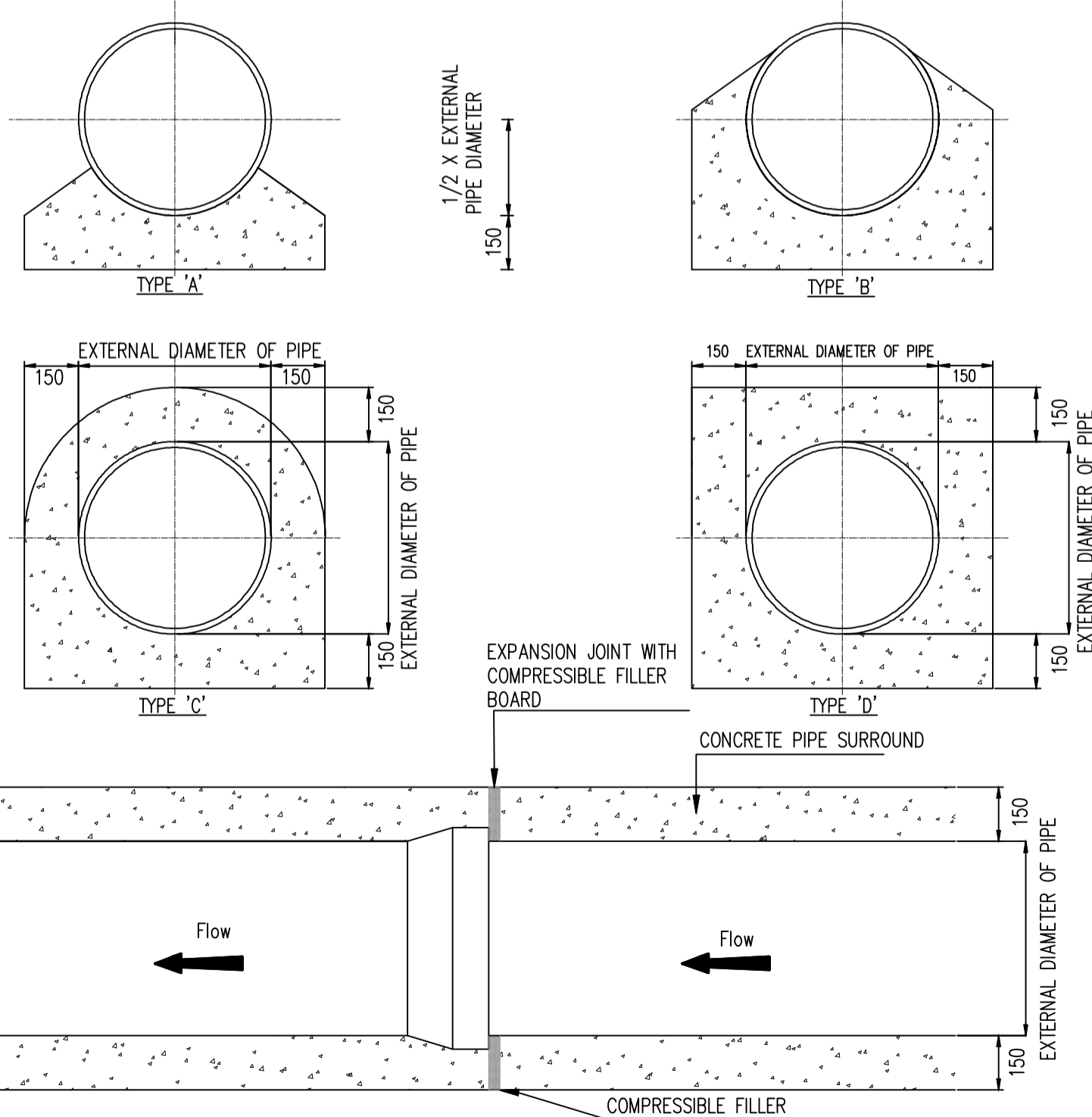
TYPICAL SEWER/SERVICE PIPE CONNECTION STD-WW-04
SCALE 1:25



TRENCH BACKFILL AND BEDDING STD-WW-07
SCALE 1:25

NOTES:

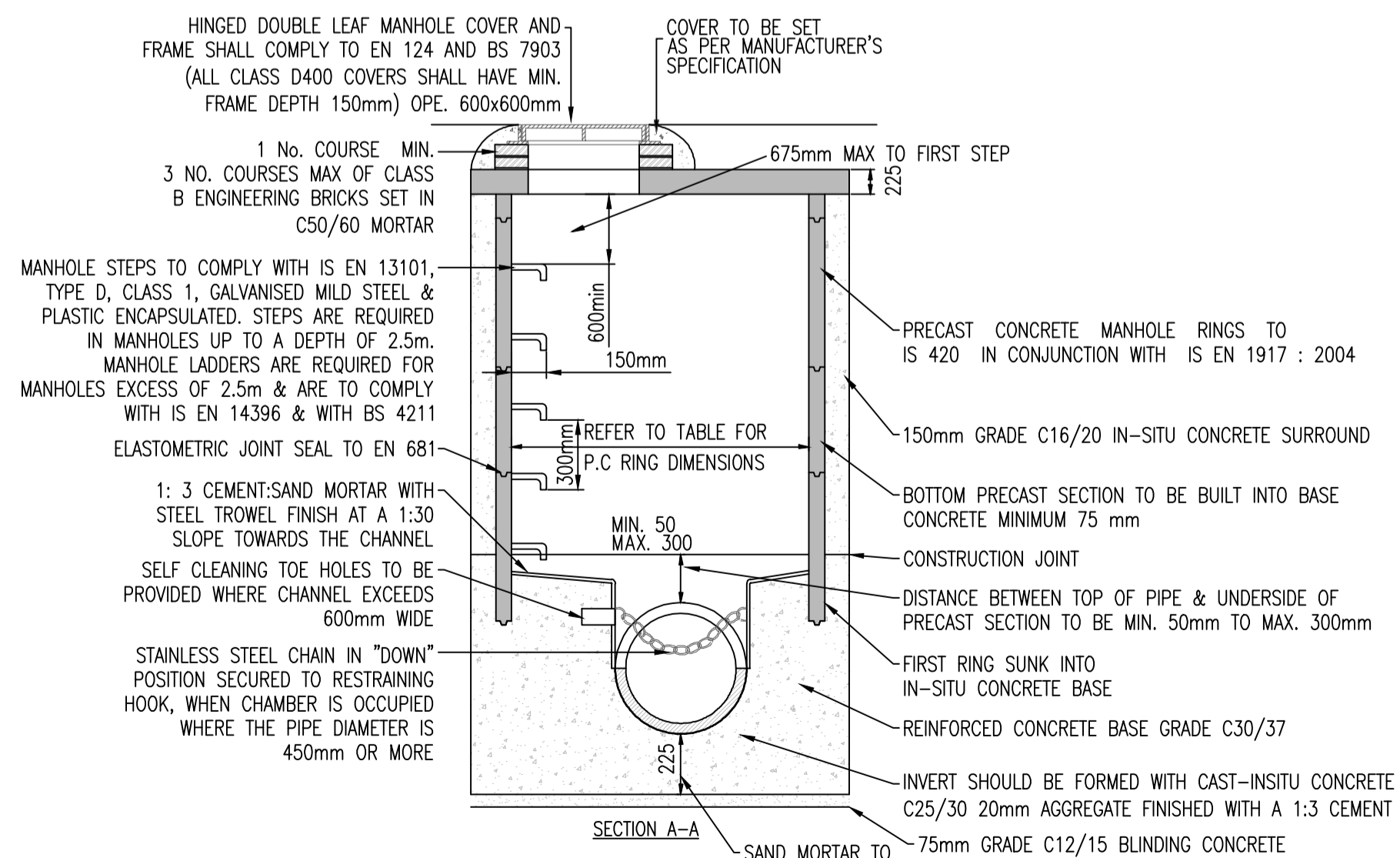
1. ALL DIMENSIONS ARE IN MILLIMETERS(mm) UNLESS NOTED OTHERWISE.
2. CONCRETE PIPE BEDS AND HAUNCHES MAY BE REQUIRED TO ADDRESS MINIMUM COVER SITUATIONS, AND SHALL BE SUBJECT TO SUBMISSION AND ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORKS.
3. CONCRETE PIPE BEDS AND HAUNCHES SHALL HAVE A MINIMUM THICKNESS OF 150mm WITH AN ABSOLUTE MINIMUM DEPTH OF COVER ABOVE THE EXTERNAL CROWN OF THE PIPE OF 750mm.
4. CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 AND TO BE CLASS C16/20.
5. THE HAUNCHES AND SURROUNDS TO BE FORMED USING FORM WORK TO PROVIDE A ROUGH CAST FINISH.
6. EXPANSION JOINTS IN THE CONCRETE SHALL BE PROVIDED AT ALL PIPE JOINTS TO ALLOW FOR PIPE FLEXIBILITY, COMPRESSIBLE FILLER BOARD TO BE IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4, AND TO BE 18mm THICK.
7. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
8. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.



CONCRETE BED, HAUNCH AND SURROUND TO WASTEWATER PIPES STD-WW-08
SCALE 1:25

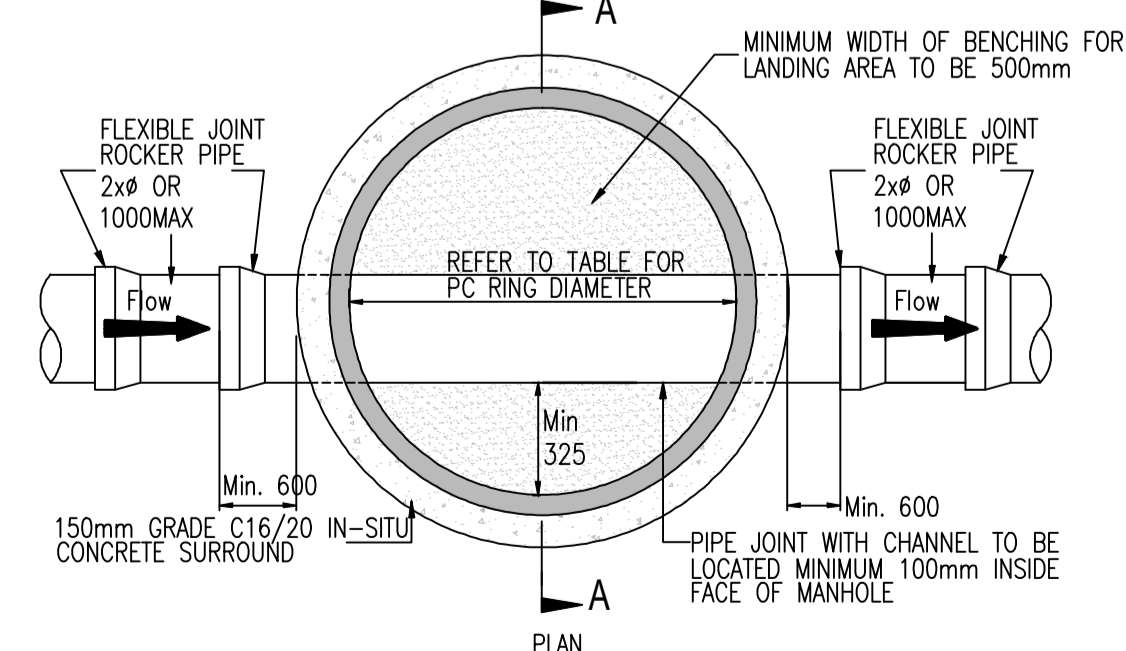
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND BS 5911-PART 3.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE.
4. APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER APPROVAL AND COMPLYING WITH BS 5911-PART 4 2002.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
6. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER APPROVAL.
7. MANHOLE ROOFS SHOULD CONSIST OF RE-REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, C30/37, WITH A MINIMUM THICKNESS OF 225mm DESIGNED TO CARRY ALL LIVE AND DEAD LOADS, ALTERNATIVELY, APPROVED PRE-CAST CONCRETE ROOF SLABS MAY BE USED SUBJECT TO IRISH WATER APPROVAL AND COMPLIANCE WITH BS 5911 PART 4: 2002.
8. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO APPROVAL FROM IRISH WATER.
9. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
10. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2015.



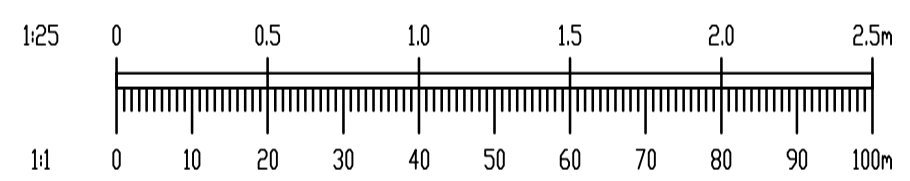
PRE-CAST CONCRETE MANHOLE STD-WW-10
SCALE 1:25

MINIMUM MANHOLE DIAMETERS	
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 375	1200
375 TO 450	1350
500 TO 750	1500



NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS NOTED OTHERWISE.
2. THE MINIMUM DEPTH OF COVER FROM THE FINISHED SURFACE TO THE CROWN OF GRAVITY PIPES WITHOUT PROTECTION SHOULD BE AS FOLLOWS:
 - a. GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.5 M. (THIS WOULD NORMALLY RELATE TO DRAINS IN PRIVATE PROPERTY. SHALLOW PIPES OF THIS NATURE ARE UNDESIRABLE AND SHOULD BE INSTALLED IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS).
 - b. DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.75 M.
 - c. DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. NEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9 M.
 - d. DEPTHS OF SEWERS IN GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
 - e. AGRICULTURAL LAND AND PUBLIC OPEN SPACE - DEPTH NOT LESS THAN 0.9 M.
 - f. OTHER HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 1.2 M.
3. CLAUSE 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS 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 808 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS.
4. SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO THE APPROVAL OF IRISH WATER.
5. PIPE BEDDING SHALL COMPLY WITH WS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE IS EN 13242 CONCRETE BED HAUNCH & SURROUND WHERE REQUIRED SHALL BE TO STD-WW-08
6. 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 NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS 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 IRISH WATER BEFORE ADVANCING WITH THE WORK.
7. IN GREEN FIELD AREAS, TYPE B BACKFILL (SELECTED EXCAVATED MATERIAL) 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.
8. 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 NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
9. NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED 350mm FROM THE SURFACE OF THE ROAD. IN THE CASE OF NON METAL PIPE MATERIAL, THE MARKER TAPE SHOULD INCORPORATE A TRACE WIRE WHICH IS LINKED TO FITTINGS AND TERMINATED AT THE WASTE WATER PUMPING STATION AND THE DISCHARGE MANHOLE.
10. TRENCH WIDTH FOR PIPE SIZE <80mm MAY BE <500mm SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY, CONSTRUCTION ACCESS REQUIREMENTS



C	10/09/19	PLANNING ISSUE	GB	EC
B	14/06/19	AMENDMENTS ON FOOT OF COMMENTS FROM IRISH WATER	GB	BW
A	14/05/19	IRISH WATER SUBMISSION	GB	BW
REV. DATE		AMENDMENT	DRN	APPD

STATUS FOR PLANNING ONLY NOT FOR CONSTRUCTION

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CLIENT **TRALFORD LTD**
ARCHITECT **NDBA ARCHITECTS**

PROJECT **PROPOSED RESIDENTIAL DEVELOPMENT, RATHMULLAN, DROGHEDA**

TITLE **PUBLIC FOUL WATER DRAINAGE DETAILS**

DRAWN C.Byrne	DESIGNED BW	APPROVED J.G.	DATE AUG. '19
SCALE AS SHOWN	JOB NO. 18-014	POZ NO. P025	REVISION C

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