

CROSS SECTION IN GRASSED AREAS

PIPE DIAMETER - /

MINIMUM TRENCH WIDTH - 'B'

TYPE 'A'

200

250

200

250

1200 | 1425 | 250 | 250 | 1925 | 2100 | 0.481

1480

1760

(Dia)mm

900 1080

1050 | 1260

DIMENSIONS

DETAILS

PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
≤ 80 RISING MAIN	SEE NOTE 10.
100	500
150	600
200	600
250	750
300	750
350	750
400	900
450	900

TYPE 'B'

0.016

0.720

0.155

0.220

0.380

600

750

850

1200

1650

1900 | 0.440

CONCRETE m³/m RUN OF SEWER

USED

HAUNCH & SURROUND

0.058 0.185

0.076 0225

0.156 0.289

0.198 0.364

0.120 | 0.260 | 0.427

0.160 0.300 0.493

0.180 | 0.340 | 0.571

0.190 | 0.380 | 0.647

0.300 | 0.550 | 0.774

0.340 | 0.660 | 0.814

0.380 0.740 0.988

0.580 | 1.080 | 1.187

0.640 1.230 1.381

TRENCH BACK FILL AND BEDDING NOTES

EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9 M.

- ALL DIMENSIONS ARE IN MILLIMETRES (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: 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,
- 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

SHALLOW PIPES OF THIS NATURE ARE UNDESIRABLE AND SHOULD BE INSTALLED IN

- C) DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. MEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS VEHICLE WEIGHT IN
- 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.
- 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 1.2m.
- CLAUSE 804 / 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 804 / 808 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. 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. ALTERNATIVE BACKFILL MATERIAL TO THAT DESCRIBED ABOVE (CLAUSE 804 OR CLAUSE 808) OF THE PIPE TRENCH WILL ONLY BE ALLOWED BY IRISH WATER WHERE THE ROADS AUTHORITY IN WHOSE FUNCTIONAL AREA THE DEVELOPMENT IS LOCATED. PROVIDES WRITTEN APPROVAL TO THE DEVELOPER TO THE USE SUCH ALTERNATIVE MATERIAL
- SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY IRISH WATER.

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 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 804 / 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. 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. 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 804 / 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT TOP OF PIPE BEDDING LAYER. 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. TRENCH WIDTHS FOR PIPE SIZES ≤80mm MAY BE <500mm. SUBJECT TO CONSIDERATION BEING
- GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
- 12. EXISTING ROAD REINSTATEMENT 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.

IRISH WATER DETAIL STD-WW-07

TRENCH BACK FILL AND BEDDING IN ROADWAYS & GRASSED AREAS

EXTERNAL

DIAMETER OF

TYPE 'C'

0.098

0.175

DISPOSAL m³/m RUN OF SEWER

0.111 0.230

0.152 0.260

0.293 0.360

0.393 0.490

0.420 | 0.540 | 0.608

0.540 0.660 0.740

0.660 0.810 0.903

0.770 | 0.950 | 1.071

1.000 | 1.200 | 1.369

1.250 | 1.530 | 1.464

1.590 | 1.960 | 1.904

2.270 2.770 2.434

2.720 | 3.310 | 2.976

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

EXTERNAL

DIAMETER OF PIPE

TYPE 'D'

NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.

$(A \text{ or } B)/2 \quad (A \text{ or } B)/2$ 50 MIN. 90 DEGREE BEND 45 DEGREE BEND BEND WITH EXTENSION PIECES 50 MIN. VARIES **FLANGE** TEE WITH EXTENSION PIECES GROUND SURFACE - REINFORCEMENT **PROFILE** TO DEVELOPER'S **DETAILS** SECTIONAL ELEVATION FOR BEND OR TEE DN x 2.5 100 22.5 DEGREE BEND 11.25 DEGREE BEND LONGITUDINAL SECTION HORIZONTAL BENDS $\sqrt{DN/2}$ PIPE SUPPORT DETAILS FOR INCLINED SLOPES, FOR PIPE **ELEVATION** GRADIENT > 10° TO HORIZONTAL SUPPORTS PLACED AT MAX. 5 METER INTERVALS CENTRE TO CENTRE ALONG PIPE WHERE PIPE IS ON SLOPE. MIN. 1 SUPPORT _ REQUIRED FOR PIPE LENGTH > 3 METERS IN SLOPE. 100 DN x 2 100 CROSS - SECTION H, J or K **ELEVATION** FI EVATION **TAPER** PIPE SUPPORT DETAILS FOR INCLINED SLOPES ELEVATION STEEL **ROAD SURFACE** SURFACE BOX **ANCHOR** STRAPS **TRENCH BOTTOM FLANGE** PLAN PLAN ANTI-TORQUE **CONCAVE BEND** CONVEX BEND H FOR 45 DEGREE BEND J DEAD END **SUPPORT** FOR 22.5 DEGREE BEND K VERTICAL BENDS DEAD END FOR 11.25 DEGREE BEND THRUST BLOCK FOR SLUICE VALVE / GATE VALVE FOR VALVE BOX ARRANGEMENT

STAINLESS FLEXIBLE COMPRESSIBLE STEEL STRAPS FILLER MATERIAL STAINLESS STEEL ANCHOR BOLTS _25x25mm CHAMFER Ö GRADE C25 / 30 MASS CONCRETE SUPPORT BLOCK DOWEL BARS CONCRETE PIPE PLINTH SUPPORT (ABOVE GROUND) PLINTH **TRENCH BOTTOM** COLLAR DI PE

THRUST BLOCK AND RISING MAIN NOTES

- 1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- 2. CONCRETE THRUST BLOCKS (ANCHORAGE) SHALL BE POSITIONED SYMMETRICALLY WITH RESPECT TO THE CONNECTING PIPE & BENDS.
- 3. TRENCH DIMENSIONS: REFER TO DRAWING No's. STD-WW-07. 4. THRUST BLOCKS SHALL BEAR ON UNDISTURBED SOIL. IF FOR ANY REASON THEY CANNOT THEN THE DEVELOPER SHALL
- NOTIFY IRISH WATER IMMEDIATELY WITH A PROPOSED SOLUTION. 5. THRUST BLOCK REINFORCEMENT REQUIRES SPECIFIC DESIGN. 6. FOR TEST PRESSURES GREATER THAN 18 BAR, THRUST BLOCK
- DESIGN IS TO BE SUBMITTED TO IRISH WATER FOR REVIEW. 7. THRUST BLOCKS ARE DESIGNED FOR FOR AN AVERAGE BEARING PRESSURE OF 100 KN/m (TYPICAL FOR SOFT CLAY) FOR OTHER
- CONDITIONS. ACTUAL DIMENSIONS MAY BE ALTERED ON INSTRUCTIONS FROM IRISH WATER. . CONCRETE IN THRUST BLOCKS SHALL BE GRADE C20/25 IN ACCORDANCE
- WITH IS EN 206. 9. COMPRESSIBLE FILLER FOR CONCRETE PROTECTION TO BE IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PLASTIC PIPES. THE THICKNESS OF COMPRESSIBLE FILLER FOR MAINS < 450mm IN
- DIAMETER IS TO BE 18mm. 10. CONCRETE THRUST BLOCKS FOR POLYETHYLENE PIPE TO COMPLY WITH THE MANUFACTURER'S REQUIREMENTS.

POLYETHYLENE CHANGE OVER 12 DAD TEST DDESSLIDE

THRUST BLOCK FOR DUCTILE IRON TO

12 DAD TO 15 DAD TEST DDESSLIDE

	< 12 BAR TEST PRESSURE											12 E	BAR T	O 15	BAR	TES	T PRE	ESSU	RE		
NOM. DIA.					DIMENS	SIONS					NOM. DIA.					DIMENS	SIONS				
(mm)	Α	В	С	D	Е	F	G	Н	J	K	(mm)	Α	В	С	D	Е	F	G	Н	J	K
100	600	330	160	80	200	350	390	700	600	400	100	700	380	190	100	200	350	510	750	600	400
150	950	510	260	130	225	450	660	900	750	600	150	1135	620	320	160	225	450	760	950	750	600
200	1150	600	310	160	300	650	790	1050	900	700	200	1400	750	380	190	300	650	980	1150	950	700
250	1350	750	380	200	300	800	970	1200	1000	750	250	1730	940	480	240	320	800	1210	1350	1050	850
300	1580	850	450	220	320	950	1110	1300	1100	850	300	2090	1130	580	300	380	950	1480	1500	1200	950
350	2100	1150	570	290	450	1000	1450	1550	1200	900	350	2600	1410	720	360	500	1050	1840	1700	1350	1050
400	2550	1400	700	350	500	1050	1800	1700	1250	1000	400	2980	1610	820	420	750	1200	2110	1850	1500	1150
450	3000	1630	830	420	680	1100	2130	1800	1450	1150	450	3400	1840	940	470	900	1300	2330	2000	1600	1250
500	3590	1950	990	500	800	1200	2540	1950	1600	1250	500	4090	2210	1130	570	1000	1400	2890	2200	1750	1350
600	4100	2200	1120	570	850	1400	2880	2100	1700	1300	600	5010*	2710*	1380	700	1000	1500	3550*	2350	1900	1500

15 BAR TO 18 BA	AR TEST PI	RESSURE

	13 BAIL TO 18 BAIL TEST FILESSOILE										
NOM. DIA.	DIMENSIONS										
(mm)	Α	В	С	D	E	F	G	Н	J	K	
100	750	400	205	100	220	400	530	800	650	400	
150	1250	700	350	180	250	500	890	1000	850	650	
200	1650	890	450	230	320	700	1170	1250	1000	800	
250	1960	1060	540	270	350	900	1370	1450	1150	900	
300	2300	1200	640	320	500	1100	1630	1650	1300	1050	
350	2930	1580	830	410	750	1200	2070	1850	1500	1150	
400	3510	1900	970	190*	1000	1300	2490	2000	1600	1250	
450	3810	2270	1160	580	1000	1350	2970	2150	1700	1350	
500	4340*	2380	1210	610	1000	1400	3700	2250	1750	1400	
600	6370*	3450*	1760	890	1000	1500	4500*	2400	2050	1650	

LE OF DIMENSIONS FOR STEEPLY INCLINED PIPELINES						
GRADIENT	SPACING					
1 IN 2 & STEEPER	5.5m					
BELOW 1 IN 2 TO 1 IN 4	11.0m					

TABLE OF DIMENSIONS FOR STEEPLY INCLINED PIPELINES						
GRADIENT	SPACING					
1 IN 2 & STEEPER	5.5m					
BELOW 1 IN 2 TO 1 IN 4	11.0m					
1 IN 4 TO 1 IN 5	16.6m					
1 IN 5 TO 1 IN 6	22.0m					

IRISH WATER DETAIL STD-WW-14 THRUST BLOCKS FOR RISING MAINS

ALL SETTING OUT DIMENSIONS TO BE CHECKED AGAINST ARCHITECTS DRAWINGS. ARCHITECTS DRAWINGS TO TAKE **PRECEDENCE**

GENERAL NOTES:-

SPECIFICATIONS.

FOR RESOLUTION.

DRAWINGS.

NUMBER IS-CDS-5030-01

UNLESS OTHERWISE NOTED.

REFER TO ARCHITECTS DRAWINGS

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL

RELEVANT ARCHITECTS & ENGINEERS DRAWINGS &

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS &

ELEVATIONS WITH ARCHITECTURAL DRAWINGS PRIOR

TO START OF CONSTRUCTION. ALL DISCREPANCIES TO

BE NOTIFIED, IN WRITING TO ENGINEERS & ARCHITECTS

ALL DIMENSIONS ON DRAWINGS ARE IN MILLIMETRES

FOR DETAILS AND SETTING OUT OF RWP, SVP, WVP &

ALL OPENINGS SEE THE RELEVANT ARCHITECTS

FOR RADON BARRIER, D.P.C. & INSULATION DETAILS

DETAILS PROVIDED ARE IN ACCORDANCE WITH IRISH WATER

DOCUMENT "WASTEWATER INFRASTRUCTURE STANDARD

DETAILS, CONNECTIONS AND DEVELOPER SERVICES".

CONSTRUCTION REQUIREMENTS FOR SELF LAY

DEVELOPEMENTS DECEMBER 2017 (REVISION 03) DOCUMENT

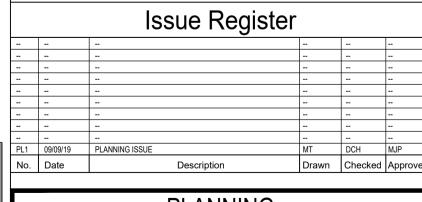
THIS DOCUMENT IS LIABLE TO CHANGE, IT IS THE

CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE

DETAILS USED ON SITE ARE IN ACCORDANCE WITH THE MOST

RECENT REVISION OF THE IRISH WATER STANDARDS.

DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.



PLANNING LIMERICK CITY & COUNTY COUNCIL PROPOSED RESIDENTIAL DEVELOPMENT AT BLACKBOY RD / GREENHILL RD PROPOSED SEWER & RISING MAIN BEDDING DETAILS Martin Peters Associates 171027 Consulting Engineers N.T.S. Kilkenny N95 AHX8 171027/C/031.1 T: + 353 56 7702761 E: info@mpa.ie W: www.mpa.ie DCH 15/08/19

- CONCRETE PIPE BED AND HAUNCH NOTES _ DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWI
- 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 WORK.
- CONCRETE PIPE BEDS AND HAUNCHES SHALL HAVE A MINIMUM THICKNESS OF 150mm WITH THE ABSOLUTE MINIMUM DEPTH OF COVER ABOVE THE EXTERNAL CROWN OF THE PIPE OF 750mm.

 CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 AND TO BE CLASS C16/20. THE HAUNCHES AND SURROUNDS TO BE FORMED USING FORM WORK TO
- PROVIDE A ROUGH CAST FINISH.
- 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
- POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO

BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC

IRISH WATER DETAIL STD-WW-08 CONCRETE BED, HAUNCH AND SURROUND TO WASTE WATER PIPES SECTIONS TYPE A, B, C & D

EXPANSION JOINT WITH COMPRESSIBLE FILLER BOARD

COMPRESSIBLE FILLER

SPIGOT AND SOCKET JOINT PLAN

CONCRETE PIPE SURROUND

DIAMETER OF