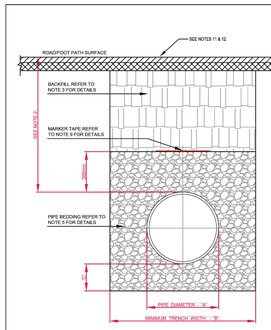
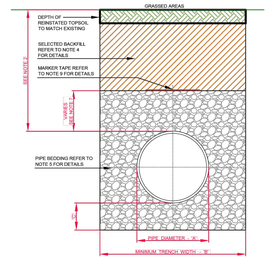


CROSS SECTION IN ROADS

1. ALL DIMENSIONS ARE IN MILLIMETRES (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) ROADWAYS AND ROAD CROSSINGS: 1m.
POSSIBILITY OF VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.9 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, FOOTWAYS, PARKING AREAS AND YARDS WITH NO VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.6 M.
C) DRIVEWAYS, FOOTWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. MEWS DEVELOPMENTS) - DEPTH NOT LESS THAN 0.9 M. ACCESS FOR VEHICLES OF GROSS WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.75 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 1.0 M.
F) OTHER ROADWAYS, HIGHWAYS AND PARKING AREAS WHERE UNRESTRICTED ACCESS TO VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 1.2m.
3. CLAUSE 804 / 806 MATERIAL IN ACCORDANCE WITH THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS SHALL BE USED AS BACKFILL MATERIAL WHERE THE SEWER MAIN IS LOCATED IN ROADS/FOOTPATHS OR WHERE THE NEAREST PART OF THE TRENCH IS WITHIN 1m OF THE PAVED EDGE OF THE ROADWAY. CLAUSE 804 / 806 TO BE COMPACTED AS PER CLAUSE 802 OF THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS. CLAUSE 804 / 806 MATERIAL SHALL BE PLACED TO A MINIMUM DEPTH OF 300mm BELOW PAVEMENTS. CONCRETE STRUCTURES OR CONCRETE PROTECTION. CHAMBER CLAUSE 804 MAY BE USED. ALTERNATIVE BACKFILL MATERIAL TO THAT DESCRIBED ABOVE (CLAUSE 804 OR CLAUSE 806) OF THE PRTI TRENCH WILL ONLY BE ALLOWED BY IRISH WATER WHERE THE ROADS AUTHORITY IN WHICH FUNCTIONAL AREA THE WORKS ARE LOCATED HAS ACCEPTED THE PROPOSAL TO USE ALTERNATIVE BACKFILL MATERIAL. THE USE SUCH ALTERNATIVE MATERIAL EVIDENCE OF THIS WRITTEN APPROVAL TO BE PROVIDED TO IRISH WATER IN ADVANCE OF THE COMMENCEMENT OF WORKS.
4. SELECTED EXCAVATED MATERIAL - COMPLYING WITH THE REQUIREMENTS OF "ACCEPTABLE MATERIAL" AS OUTLINED ON CLAUSE 801 OF THE TII SPECIFICATION FOR ROADWORKS, TABLE 01/CLASS 6 CLASS 2 - MAY BE USED IN GREEN FIELD AREAS ABOVE DRAINLAIN PIPE SURROUND MATERIAL SUBJECT TO REVIEW BY IRISH WATER. ALTERNATIVELY, SPECIAL PIPE SUPPORT MEASURES MAY BE REQUIRED.
5. THE PIPE BEDDING GRANULAR MATERIAL SHALL BE 14mm TO 5mm (窄 6L) GRADED AGGREGATE OR 10mm (窄 5L) SINGLE SIZED AGGREGATE TO IS EN 13242. CONCRETE BED, HAUNCH, & SURROUND, WHERE REQUIRED, SHALL BE TO STD-WW-05.
6. IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE ASSESSED BY A GEOTECHNICAL ENGINEER IN ACCORDANCE WITH THE MANAGEMENT ACT AND CLAUSE 804 / 806 MATERIAL IN ACCORDANCE WITH THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING. ALTERNATIVELY, SPECIAL PIPE SUPPORT MEASURES MAY BE REQUIRED. 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 - COMPLYING WITH THE REQUIREMENTS OF "ACCEPTABLE MATERIAL" AS OUTLINED ON CLAUSE 801 OF THE TII SPECIFICATION FOR ROADWORKS, TABLE 01/CLASS 6 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 IN ACCORDANCE WITH IS EN 1610 AND IS EN 1295-1. THE SIDE HAUNCH FILL MATERIAL IN GREENFIELD AREAS SHALL HAVE A MINIMUM COVER OF 300mm OVER THE 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 REMOVED TO A MINIMUM DISTANCE OF 150mm BELOW THE PIPE AND THE TRENCH WITH THE VOID FILLED WITH CLAUSE 804 / 806 MATERIAL IN ACCORDANCE WITH THE TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
9. NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT THE TOP OF PIPE BEDDING LAYER FOR SEWERS AND RISING MAINS. IT SHOULD RUN CONTINUOUSLY ALONG THE PIPE 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 (IF PROVIDED) AND THE DISCHARGE MANHOLE.
10. TRENCH WIDTHS FOR PIPE SIZES ≤ 300mm MAY BE ≤900mm, SUBJECT TO ADDITIONAL SAFETY MEASURES BEING ADOPTED FOR THE HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
11. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY 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.

PIPE DIAMETER "A" (mm)	TRENCH WIDTH "B" (mm)
≤ 80 RISING MAIN	SEE NOTE 10
100	500
150 - 200	600
>200 - 250	750
>250 - 450	900



CROSS SECTION IN GRASSED AREAS

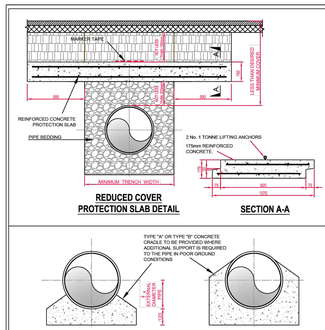
PIPE DIAMETER "A" (mm)	DEPTH OF BEDDING "C" (mm)
6100	100
150 - 450	200

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE EIREANN : IRISH WATER — STANDARD DETAILS - WASTEWATER — SCALE NOT TO SCALE — DATE SEPT. 2015

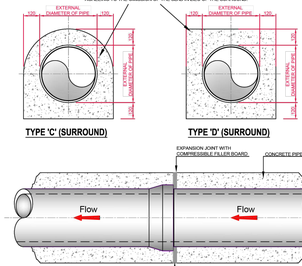
No.	Date	Drn	Chk	Description	App
2	07/20/09	TOC		Modified trench width table. Minor edits to note 5. Note 5 revised to minimal type.	MCD
1	11/17/08	JMC	TOC	Updated & Added Notes	MCD
0	09/15/08	JMC	TOC	Initial Issue	SL

TITLE: TRENCH BACKFILL AND BEDDING — DRAWING No. STD-WW-07 — REV 2



REDUCED COVER PROTECTION SLAB DETAIL

SECTION A-A



TYPE 'A' (BED)

TYPE 'B' (HAUNCH)

TYPE 'C' (SURROUND)

TYPE 'D' (SURROUND)

SPIGOT AND SOCKET JOINT

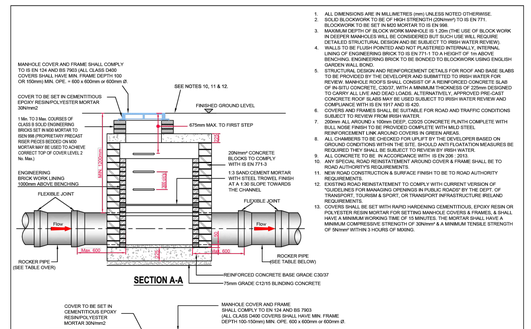
1. FOR ANY SLABBING WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR REVIEW BY IRISH WATER.
2. MARKER TAPE TO BE PLACED ABOVE THE SLAB AND ALONG THE DIRECTION OF THE PIPELINE
3. CONCRETE TO BE GRADE C30/35
4. MINIMUM COVER TO STEEL REINFORCEMENT =40mm
5. SLABS TO BE DESIGNED FOR USE UNDER A HGV5 LOAD IN ACCORDANCE WITH BS5400-2. DESIGN TO BE SUBMITTED TO IRISH WATER FOR ASSESSMENT PRIOR TO INSTALLATION.
6. THE SOIL ON WHICH THE SLAB RESTS MUST HAVE A CBR OF 4% OR GREATER.WHERE THE CBR IS LESS THAN 4% THE MATERIAL SHALL BE REMOVED AND REPLACED WITH IMPORTED GRANULAR MATERIAL AS APPROVED BY IRISH WATER.
7. IF DIRECTION OF PIPE IS PARALLEL OR DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW.
8. IF PIPELINE PROTECTION SLAB IS TO BE USED SOLELY FOR IMPACT PROTECTION & OVERALL DEPTH OF COVER IS GREATER THAN 1.2m, THE DISTANCE BETWEEN UNDERSIDE OF SLAB & TOP OF PIPE MAY BE INCREASED AFTER CONSULTATION WITH IRISH WATER.
9. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
10. CONCRETE BED AND HAUNCHES MAY BE REQUIRED TO PROVIDE ADDITIONAL SUPPORT IN POOR GROUND CONDITIONS WHERE THE PIPE IS NOT PROVIDED WITH IRISH WATER GEOTECHNICAL REPORT SUPPORTING THEIR USE.
11. CONCRETE SURROUNDS SHALL HAVE A MINIMUM THICKNESS OF 150mm WITH AN ABSOLUTE MINIMUM OF 100mm AND EXTEND TO THE EXTERNAL CROWN OF THE PIPE OF 750mm.
12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 AND TO BE GRADE C16/20 TO IS EN206
13. THE HAUNCHES AND SURROUNDS TO BE FORMED USING FORM WORK TO PROVIDE A ROUGH CAST FINISH
14. 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 IS EN 622-1 AND IS EN 622-4, AND TO BE 16mm THICK.
15. POLYETHYLENE AND uPVC PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
16. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE EIREANN : IRISH WATER — STANDARD DETAILS - WASTEWATER — SCALE NOT TO SCALE — DATE SEPT. 2015

No.	Date	Drn	Chk	Description	App
1	07/20/09	TOC		Protection slab detail added and notes updated. Min updated.	MCD
0	09/15/08	JMC	TOC	Initial Issue	SL

TITLE: CONCRETE PROTECTION SLAB, BED, HAUNCH, AND SURROUND, TO WASTEWATER PIPES — DRAWING No. STD-WW-08 — REV 1



ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750	1250

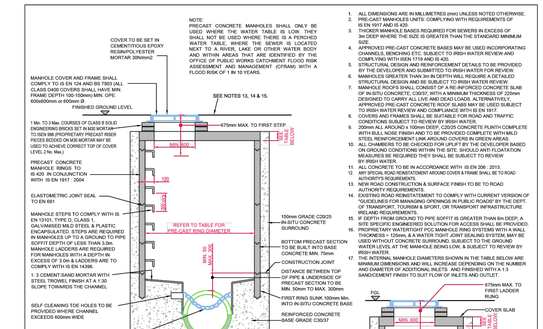
* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE EIREANN : IRISH WATER — STANDARD DETAILS - WASTEWATER — SCALE NOT TO SCALE — DATE SEPT. 2015

No.	Date	Drn	Chk	Description	App
3	07/20/09	TOC		Sealing fitting/ rings revised & notes updated	MCD
2	11/17/08	JMC	TOC	Added cutaway pipe table, deep manhole detail, added & updated notes	MCD
1	09/16/08	JMC	TOC	Added steps & revised access ope & cover notes	MCD
0	09/15/08	JMC	TOC	Initial Issue	SL

TITLE: BLOCKWORK MANHOLE (< 450mm DIA.) — DRAWING No. STD-WW-09 — REV 3



MINIMUM MANHOLE DIAMETERS			
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	MIN. PRECAST ROOF SLAB EFFECTIVE THICKNESS (mm)	MIN. IN-SITU ROOF SLAB THICKNESS (mm)
LESS THAN 375	1200	160	225
375 TO 450	1350	160	225
500 TO 750 *	1500	170	225

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750 *	1000
GREATER THAN 750	1250

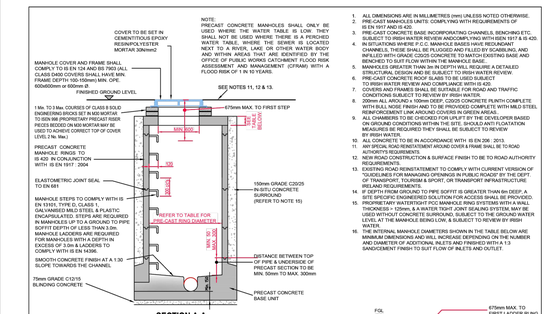
* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE EIREANN : IRISH WATER — STANDARD DETAILS - WASTEWATER — SCALE NOT TO SCALE — DATE SEPT. 2015

No.	Date	Drn	Chk	Description	App
3	07/20/09	TOC		Notes Updated	MCD
2	11/17/08	JMC	TOC	Added flexible joint table, deep manhole detail, added & updated notes	MCD
1	09/16/08	JMC	TOC	Added steps & revised access ope & cover notes	MCD
0	09/15/08	JMC	TOC	Initial Issue	SL

TITLE: PRE-CAST CONCRETE MANHOLE WITH CAST IN-SITU BASE — DRAWING No. STD-WW-10 — REV 3



MANHOLE DETAIL > 3m & < 6m GROUND TO SOFFIT DEPTH

MINIMUM MANHOLE DIAMETERS			
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	MIN. PRECAST ROOF SLAB EFFECTIVE THICKNESS (mm)	MIN. IN-SITU ROOF SLAB THICKNESS (mm)
LESS THAN 375	1200	160	225
375 TO 450	1350	160	225
500 TO 750 *	1500	170	225

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750 *	1000
GREATER THAN 750	1250

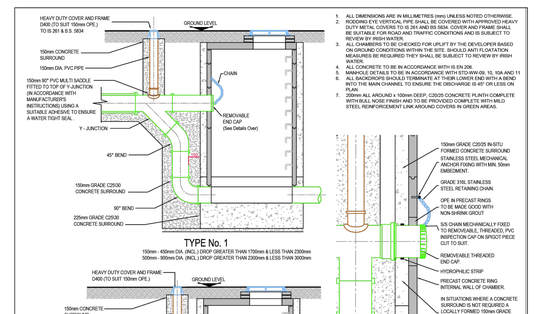
* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

UISCE EIREANN : IRISH WATER — STANDARD DETAILS - WASTEWATER — SCALE NOT TO SCALE — DATE SEPT. 2015

No.	Date	Drn	Chk	Description	App
3	07/20/09	TOC		Notes Updated	MCD
2	11/17/08	JMC	TOC	Added cutaway pipe table, deep manhole detail, added & updated notes	MCD
1	09/16/08	JMC	TOC	Added steps & revised access ope & cover notes	MCD
0	09/15/08	JMC	TOC	Initial Issue	SL

TITLE: IN-SITU CONCRETE MANHOLE — DRAWING No. STD-WW-11 — REV 3


HEAVY DUTY COVER AND FRAME (MAX.D3 SUIT 100mm OPE.) TO IS 2418 & B.S. 3416
GROUND LEVEL
150mm CONCRETE SURROUND
150mm DIA. PVC PIPE
150mm 90° PVC MULTI SADDLE FITTED TO TOP OF TJUNCTION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS USING A SUITABLE ADHESIVE TO ENSURE A WATER TIGHT SEAL
CHAIN
REMOVABLE END CAP (See Details Over)
Y - JUNCTION
45° BEND
150mm GRADE C25/30 CONCRETE SURROUND
90° BEND
225mm GRADE C25/30 CONCRETE SURROUND
TYPE No. 1
150mm - 450mm DIA. (INCL.) DROP GREATER THAN 1700mm 1700mm - 900mm DIA. (INCL.) DROP GREATER THAN 1000mm AND LESS THAN 2000mm (SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS.)
HEAVY DUTY COVER AND FRAME D400 (TO SUIT 100mm OPE.)
150mm CONCRETE SURROUND
150mm DIA. PVC PIPE
150mm 90° PVC MULTI SADDLE FITTED TO TOP OF TJUNCTION IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS USING A SUITABLE ADHESIVE TO ENSURE A WATER TIGHT SEAL
TEE JUNCTION
150mm GRADE C25/30 CONCRETE SURROUND
90° BEND
225mm GRADE C25/30 CONCRETE SURROUND
TYPE No. 2
150mm - 450mm DIA. (INCL.) DROP GREATER THAN 900 AND LESS THAN 1700mm 1700mm - 900mm DIA. (INCL.) DROP GREATER THAN 1000mm AND LESS THAN 2000mm (SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD D