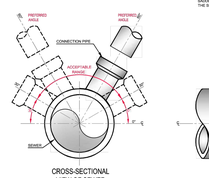
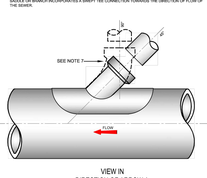
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AS FAR AS PRACTICABLE, JUNCTIONS AND SERVICE CONNECTIONS SHALL BE BUILT IN FOR ALL PLANNED DEVELOPMENT. WHERE THIS IS NOT PRACTICABLE, A SADDLE CONNECTION TO THE PUBLIC SEWER IN POST CONSTRUCTION CONNECTION THE DEVELOPER SHALL BRING THE SERVICE CONNECTION 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 AND THE HORIZONTAL SHALL BE WITHIN THE RANGE OF 45° TO 90°.
4. WHERE THE SERVICE PIPE CONNECTION WITHIN THE FOOTPRINT OF THE BELOW LAY AGREEMENT IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER OF 300mm DIAMETER OR LESS, CONNECTIONS SHALL BE MADE USING 45° WYE JUNCTIONS.
5. WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER GREATER THAN 300mm, THE FOLLOWING SHALL APPLY :
   a. WHERE 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. WHERE THE DIAMETER OF THE CONNECTING PIPE IS LESS THAN OR EQUAL TO HALF THE DIAMETER OF THE SEWER, A SADDLE CONNECTION MAY BE PERMITTED PROVIDED THE CONNECTING PIPE HAS A SWEEPED BEND TO FORM THE CONNECTION TO THE MAINS.
6. CONNECTION USING SADDLES MAY ONLY BE USED IN EXCEPTIONAL CIRCUMSTANCES AND ONLY TO WHERE THE CONNECTION IS TO AN EXISTING SEWER. CONNECTIONS MADE WITH SADDLE FITTINGS SHALL BE MADE BY CUTTING AND SAFELY REMOVING A CORE FROM THE PIPE AND JOINTING THE SADDLE FITTING TO THE PIPE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. THE SADDLE FITTING AND THE CONNECTING PIPE SHALL NOT PROTRUDE INTO THE SEWER.
7. THE USE OF 90° "Y" BRANCH OR SADDLE CONNECTIONS TO THE SEWER MAY BE ALLOWED, PROVIDED THE SADDLE OR BRANCH INCORPORATES A SHORT TEE CONNECTION TOWARDS THE DIRECTION OF FLOW OF THE SEWER.

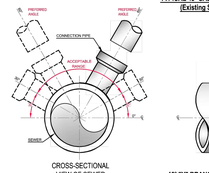


CROSS-SECTIONAL VIEW OF SEWER

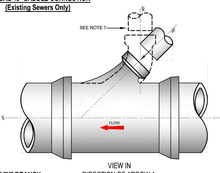


VIEW IN DIRECTION OF ARROW A

TYPICAL 45° SADDLE CONNECTION (Existing Sewers Only)



CROSS-SECTIONAL VIEW OF SEWER



VIEW IN DIRECTION OF ARROW A

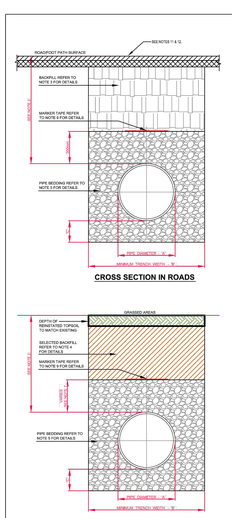
45° "Y" BRANCH

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

									STANDARD DETAILS - WASTEWATER	SCALE NOT TO SCALE	DATE SEPT. 2015
								TITLE	TYPICAL SEWER / SERVICE PIPE CONNECTION	DRAWING No. STD-WW-04	REV 2
2	27/10/16	TOC	Gross errors removed & new layout to match	MCC							
1	11/11/14	AK	Updated Notes	KD							
0	29/10/14	AK	Initial Issue	SL							
No	Date	Drn	Ch	Description	App						

UISCE ÉIREANN / IRISH WATER

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. THE CROWN OF THE PIPE SHALL BE A MINIMUM OF 600mm BELOW THE FINISHED GROUND LEVEL OF THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTILAGE, IF PRACTICABLE. IF NOT PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. ANY PIPES AND ASSOCIATED ACCESS UPSTREAM OF THE POINT OF CONNECTION TO A PUBLIC SEWER WITHIN THE CONFINES OF A PRIVATE BOUNDARY IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS.



CROSS SECTION IN ROADS

CROSS SECTION IN GRASSED AREAS

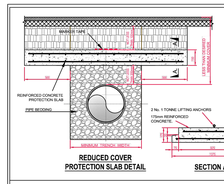
PIPE DIAMETER "A" (mm)	TRENCH WIDTH "W" (mm)
2 80 RISING MAIN	500 NOTE 10
150	500
150 - 225	600
>225 - 350	750
>350 - 450	900

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

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

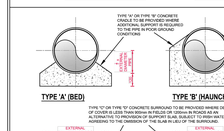
									STANDARD DETAILS - WASTEWATER	SCALE NOT TO SCALE	DATE SEPT. 2015
								TITLE	TRENCH BACKFILL AND BEDDING	DRAWING No. STD-WW-07	REV 2
2	27/10/16	TOC	Gross errors removed & new layout to match	MCC							
1	11/11/14	AK	Updated Notes	KD							
0	29/10/14	AK	Initial Issue	SL							
No	Date	Drn	Ch	Description	App						

UISCE ÉIREANN / IRISH WATER

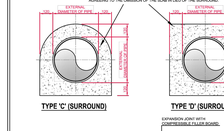


REDUCED COVER PROTECTION SLAB DETAIL

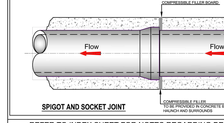
1. FOR ANY BLASTING WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR REVIEW BY IRISH WATER.
2. MARKER TAPE TO BE PLACED ABOVE THE SLAB AND ALONG THE DIRECTION OF THE PIPELINE
3. CONCRETE TO BE GRADE C30/35
4. MINIMUM COVER TO STEEL REINFORCEMENT =40mm
5. SLABS TO BE DESIGNED FOR LIVE LOADS 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. IF THE SOIL IS WEAKER THAN THIS, THE WEAK SOIL MUST BE REMOVED AND REPLACED WITH IMPORTED GRANULAR MATERIAL AS APPROVED BY IRISH WATER.
7. IF DIRECTION OF TRAVEL AND DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW



TYPE 'A' (BED) TYPE 'B' (HAUNCH)



TYPE 'C' (SURROUND) TYPE 'D' (SURROUND)



SPIGOT AND SOCKET JOINT

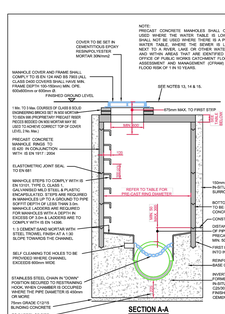
SECTION A-A

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS AND INFORMATION SHOWN ON THIS DRAWING ARE TO BE PROVIDED TO IRISH WATER WITH GEOTECHNICAL REPORT SUPPORTING THEIR USE.
3. CONCRETE SURROUNDS SHALL HAVE A MINIMUM THICKNESS OF 150mm AND SHALL HAVE A MINIMUM COVER OF 100mm OVER THE PIPE (UP TO 300mm).
4. ALL CONCRETE TO BE IN ACCORDANCE WITH BS EN 206 AND TO BE GRADE C30/37 TO BS 8500
5. THE MANHOLES 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 JOINTS TO ALLOW FOR PIPE FLEXIBILITY. COMPRESSIBLE FILLER BOARD TO BE IN ACCORDANCE WITH BS EN 622-1 AND BS EN 622-4, 20mm THICK.
7. POLYETHYLENE AND uPVC PIPES SHALL BE WRAPPED IN PLASTIC SHEETING TO PROVIDE A SLIDING MOVEMENT TOLERANCE WITH BS 8010 BEFORE BEING CAST INTO CONCRETE.
8. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.
9. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
10. THE CROWN OF THE PIPE SHALL BE A MINIMUM OF 600mm BELOW THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTILAGE, IF PRACTICABLE. IF NOT PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
11. SERVICE CONNECTION FROM PUBLIC SEWER TO PROPERTY BOUNDARY IS A PUBLIC SEWER. ANY PIPES AND ASSOCIATED ACCESS UPSTREAM OF THE PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING REGULATIONS.

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

									STANDARD DETAILS - WASTEWATER	SCALE NOT TO SCALE	DATE SEPT. 2015
								TITLE	CONCRETE PROTECTION SLAB, BED, HAUNCH, AND SURROUND, TO WASTEWATER PIPES	DRAWING No. STD-WW-08	REV 1
3	30/10/20	TOC	Protection slab detail added and Note added. Bitumen clause.	SL							
2	27/10/16	TOC	Minor edits to note 5	MCC							
1	11/11/14	AK	Updated Notes	KD							
0	29/10/14	AK	Initial Issue	SL							
No	Date	Drn	Ch	Description	App						

UISCE ÉIREANN / IRISH WATER



SECTION A-A

PLAN

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 275	1200	190	225
275 TO 450	1350	190	225
450 TO 750 *	1500	190	225

ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750 *	1200

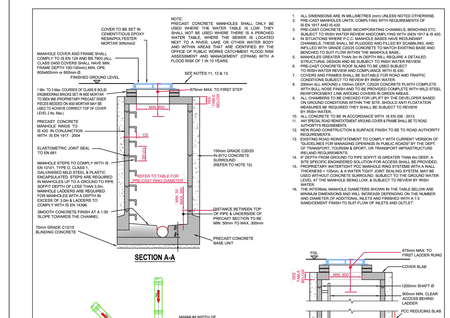
* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS
MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO HIGH SPEC PIPES WITHIN MANHOLE

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

									STANDARD DETAILS - WASTEWATER	SCALE NOT TO SCALE	DATE SEPT. 2015
								TITLE	PRE-CAST CONCRETE MANHOLE WITH CAST IN-SITU BASE	DRAWING No. STD-WW-10	REV 3
2	27/10/16	TOC	Gross errors removed & new layout to match	MCC							
1	11/11/14	AK	Updated Notes	KD							
0	29/10/14	AK	Initial Issue	SL							
No	Date	Drn	Ch	Description	App						

UISCE ÉIREANN / IRISH WATER

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. RODDING EYE VERTICAL PIPE SHALL BE COVERED WITH APPROVED HEAVY DUTY COVER AND FRAME. THE COVER AND FRAME SHALL COMPLY TO BS EN 124 AND BS 7903.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 450mm DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE.
4. APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING ECCENTRIC CONFIGURATIONS, SUBJECT TO IRISH WATER REVIEW AND COMPLYING WITH BS8 1779 AND BS 8301.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED FOR ALL MANHOLES DEEPER THAN 3m IN DEPTH. ALL MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
6. PRE-CAST CONCRETE ROOF SLABS TO BE USED SUBJECT TO IRISH WATER REVIEW AND COMPLIANCE WITH BS EN 1917.
7. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH BS EN 206 (2013). ALL CONCRETE TO BE IN ACCORDANCE WITH BS EN 206 (2013).
9. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY REQUIREMENTS.
10. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 (2013).
12. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOTATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
13. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 (2013).
14. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOTATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
15. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 (2013).
16. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY REQUIREMENTS.
17. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
18. ALL CONCRETE TO BE IN ACCORDANCE WITH CURRENT VERSION OF "GUIDELINES FOR MANAGING OPENINGS IN PUBLIC ROADS" BY THE DEPT OF TRANSPORT, TOURISM & SPORT, OR TRANSPORT INFRASTRUCTURE IRELAND REQUIREMENTS.
19. IF DEPTH FROM GROUND TO PIPE SOFFIT IS GREATER THAN 6m DEEP, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
20. THE INTERNAL MANHOLE DIAMETERS SHOWN IN THE TABLE BELOW ARE THICKNESS = 125mm, & A WATER TIGHT JOINT SEALING SYSTEM MAY BE USED WITHOUT CONCRETE SURROUNDS, SUBJECT TO THE GROUND WATER TABLE, WHERE THE SEWER IS LOCATED NEXT TO A RIVER, LAKE OR OTHER WATER BODY OR WHERE THE SEWER IS LOCATED IN AREAS THAT ARE IDENTIFIED BY THE OFFICE OF PUBLIC WORKS CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT (CFRAM) WITH A FLOOD RISK OF 1 IN 10 YEARS.
21. THE INTERNAL MANHOLE DIAMETERS SHOWN IN THE TABLE BELOW ARE THICKNESS = 200mm, & A WATER TIGHT JOINT SEALING SYSTEM MAY BE USED WITHOUT CONCRETE SURROUNDS, SUBJECT TO THE GROUND WATER TABLE, WHERE THE SEWER IS LOCATED IN AREAS THAT ARE IDENTIFIED BY THE OFFICE OF PUBLIC WORKS CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT (CFRAM) WITH A FLOOD RISK OF 1 IN 10 YEARS.



SECTION A-A

PLAN

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

(MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE: 4.5m)

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 275	1200	190	225
275 TO 450	1350	190	225
450 TO 750 *	1500	190	225

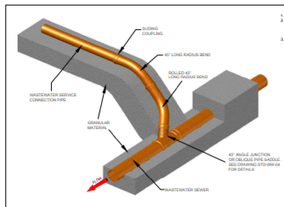
ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750 *	1200

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

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

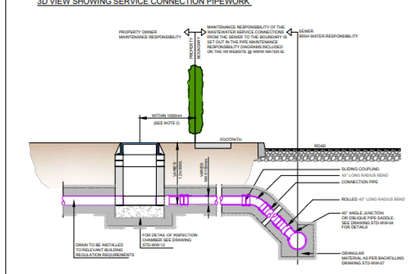
									STANDARD DETAILS - WASTEWATER	SCALE NOT TO SCALE	DATE SEPT. 2015
								TITLE	PRE-CAST CONCRETE MANHOLE WITH PRECAST BASE.	DRAWING No. STD-WW40A	REV 0
0	27/10/16	TOC	Initial Issue	MCC							
No	Date	Drn	Ch	Description	App						

UISCE ÉIREANN / IRISH WATER



3D VIEW SHOWING SERVICE CONNECTION PIPEWORK

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. THE CROWN OF THE PIPE SHALL BE A MINIMUM OF 600mm BELOW THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTILAGE, IF PRACTICABLE. IF NOT PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. ANY PIPES AND ASSOCIATED ACCESS UPSTREAM OF THE POINT OF CONNECTION TO A PUBLIC SEWER WITHIN THE CONFINES OF A PRIVATE BOUNDARY IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH BUILDING REGULATIONS.



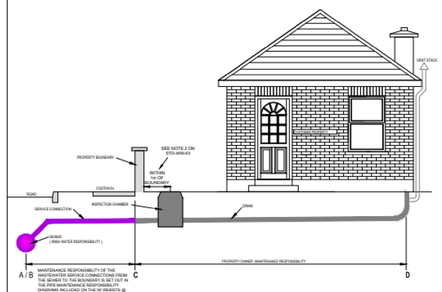
SECTION SHOWING DRAIN AND SERVICE CONNECTION PIPEWORK

PIPE SIZE (mm)	GRADIENT
150	1:40 - 1:60

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

									STANDARD DETAILS - WASTEWATER	SCALE NOT TO SCALE	DATE SEPT. 2015
								TITLE	DRAIN AND SERVICE CONNECTION PIPEWORK	DRAWING No. STD-WW-03	REV 2
2	27/10/16	TOC	Gross errors removed & new layout to match	MCC							
1	11/11/14	AK	Updated Notes	KD							
0	29/10/14	AK	Initial Issue	SL							
No	Date	Drn	Ch	Description	App						

UISCE ÉIREANN / IRISH WATER



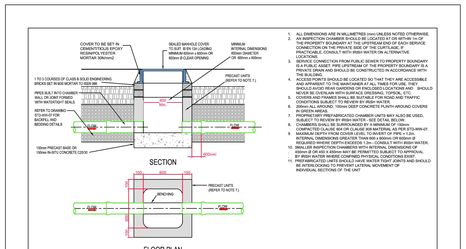
MAINTENANCE RESPONSIBILITY OF THE WASTEWATER SERVICE CONNECTIONS FROM THE SEWER TO THE BOUNDARY IS SET OUT IN THE PPE MAINTENANCE RESPONSIBILITY DIAGRAMS INCLUDED ON THIS IW WEBSITE @ WWW.IWCHOICE.IE

	MAINTENANCE RESPONSIBILITY
(A) SEWER	IRISH WATER
(B-C) SERVICE CONNECTION (INCLUDING GADGET)	SEE NOTE ABOVE
INSPECTION CHAMBER	PROPERTY OWNER
(C-D) DRAIN	PROPERTY OWNER
INTERNAL PLUMBING	PROPERTY OWNER

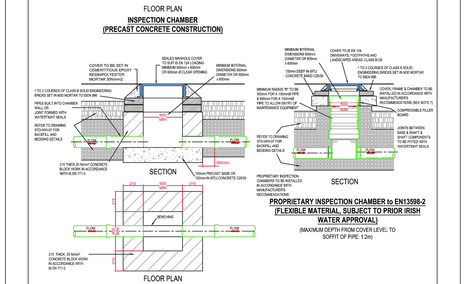
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

									STANDARD DETAILS - WASTEWATER	SCALE NOT TO SCALE	DATE SEPT. 2015
								TITLE	WASTEWATER SERVICE CONNECTION MAINTENANCE RESPONSIBILITY	DRAWING No. STD-WW-01	REV 2
2	27/10/16	TOC	Gross errors removed & C-C ownership revised	MCC							
1	30/07/14	AK	Note reference added	KD							
0	29/10/14	AK	Initial Issue	SL							
No	Date	Drn	Ch	Description	App						

UISCE ÉIREANN / IRISH WATER



INSPECTION CHAMBER (PRECAST CONCRETE CONSTRUCTION)


COVER TO BE SET IN CEMENTITIOUS EPOXY RESINPOLYESTER MORT