

# Wastewater Infrastructure Standard Details

## Connections and Developer Services

Design and Construction Requirements for Self-Lay Developments  
July 2020 (Revision 4)

Document IW-CDS-5030-01



Part of **ervia** group

IW-CDS-5030-01

**Revision Log**

<b>Date</b>	<b>Details of Revision</b>	<b>Revision</b>	<b>Author</b>	<b>Approver</b>
April 2016	General revisions	01	T'OC	M'OD
August 2016	General revisions & drawing added	02	TO'C	MO'D
December 2017	General revisions & drawing added	03	TO'C	MO'D
July 2020	General revisions & drawings added	04	TO'C	MO'D

## Background

Technical Documentation has been developed by Irish Water's Connections and Developer Services which outlines the requirements for wastewater services infrastructure within developments.

These Standard Details have been developed to outline to developers Irish Water's requirements for the provision of wastewater infrastructure that is to be installed in developments and that would be connected to Irish Water's networks and subsequently vested in Irish Water.

The Standard Details outline design and construction requirements to ensure consistency in the provision of materials, equipment and workmanship, etc. They also provide the basis for developers' detailed design proposals for wastewater infrastructure, leading to the provision of infrastructure that is suitable for connection to Irish Water's networks and easy operation and maintenance of the new infrastructure.

The Standard Details are based on best practice within the water industry. They take account of the experience of Local Authorities in the provision of these services to new developments. They have been successfully used by Irish Water's own internal functions for a variety of projects and they are in line with water utility industry norms.

There are 58 No Standard Details dealing with wastewater infrastructure covering all aspects of such infrastructure.

These Standard Details are accompanied by a Design Risk Assessment (DRA) (document number IW-CDS-5030-02), which outlines the residual health and safety responsibilities of developers and their designers/contractors in the provision of such infrastructure.

The use of the Standard Details is mandatory in all new Irish Water Connection Agreement Offers issued after 1<sup>st</sup> June 2016.

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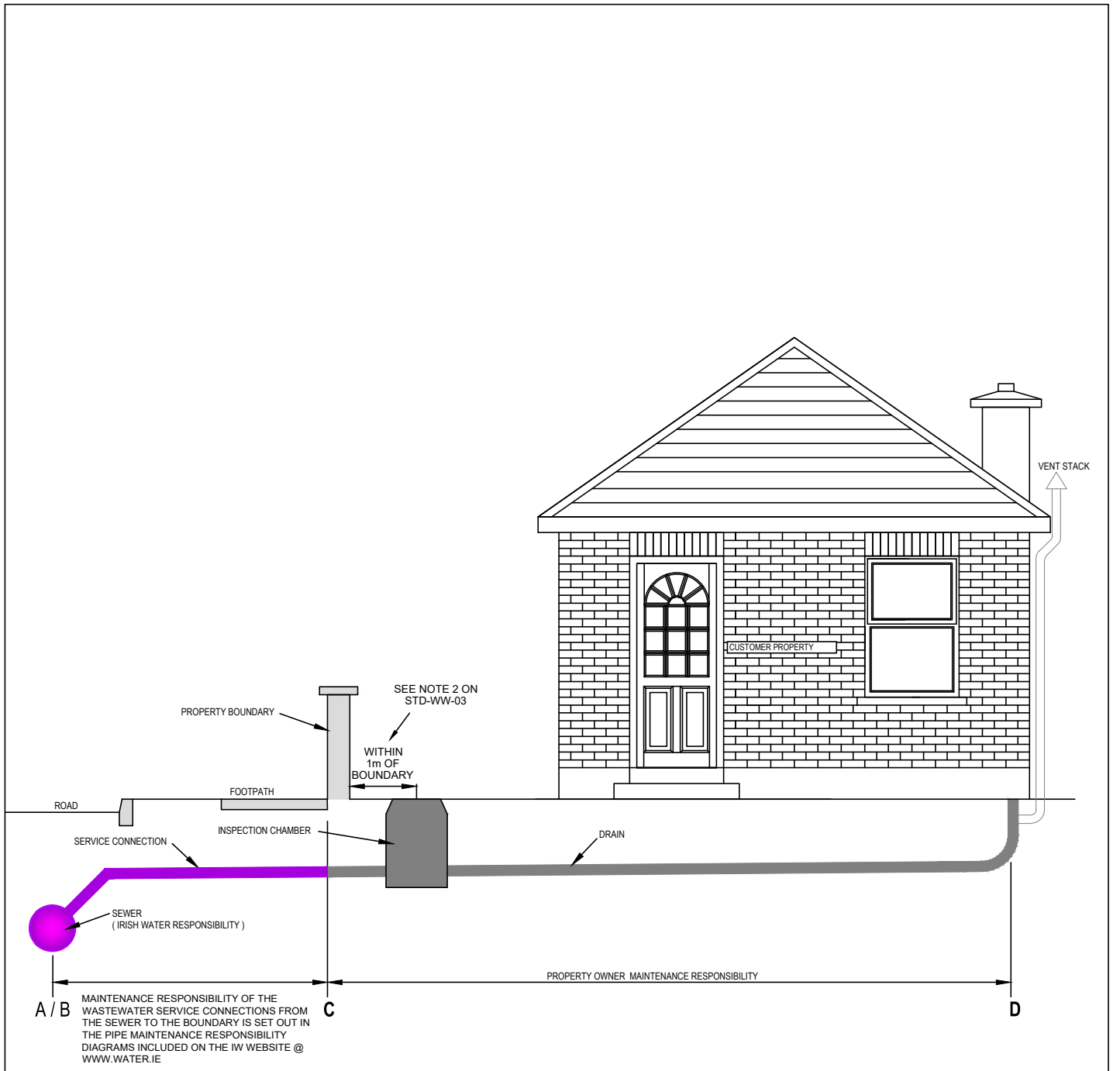
These Standard Details show the acceptable typical details and outline the minimum standards that are required by Irish Water for the provision of wastewater pipes and related infrastructure which are to be connected to the Irish Water Network. They shall be used in conjunction with the associated Code of Practice for Wastewater Infrastructure and Design Risk Assessments that have been developed which identify the risks that designers shall take into account in the detailed design of the wastewater pipes and related infrastructure to be connected to the Irish Water Network. The pipes and related infrastructure to be put in place within developments shall comply fully with these Standard Details. Ultimate responsibility (including, but not limited to, any losses, costs, demands, damages, actions, expenses, negligence and claims) for the detailed design, construction and provision of such pipes and related infrastructure shall rest entirely with the Developer, his/her Designer(s), Contractor(s) or other connected party. Irish Water assumes no responsibility for and gives no guarantees, undertakings or warranties in relation to the pipes and related infrastructure to be provided in accordance with these Standard Details.

No part of the Standard Details shall be reproduced or transmitted in any form or stored in any retrieval system of any nature without the prior written permission of Irish Water as copyright holder, except as agreed for use.

These Standard Details shall be used in conjunction with current Irish Water Codes of Practice, which will take precedence over the Standard Details.

These Standard Details may also be used for the installation of wastewater infrastructure for Asset Delivery Works & Capital Project Works Programmes at the discretion of Irish Water.

**July 2020**



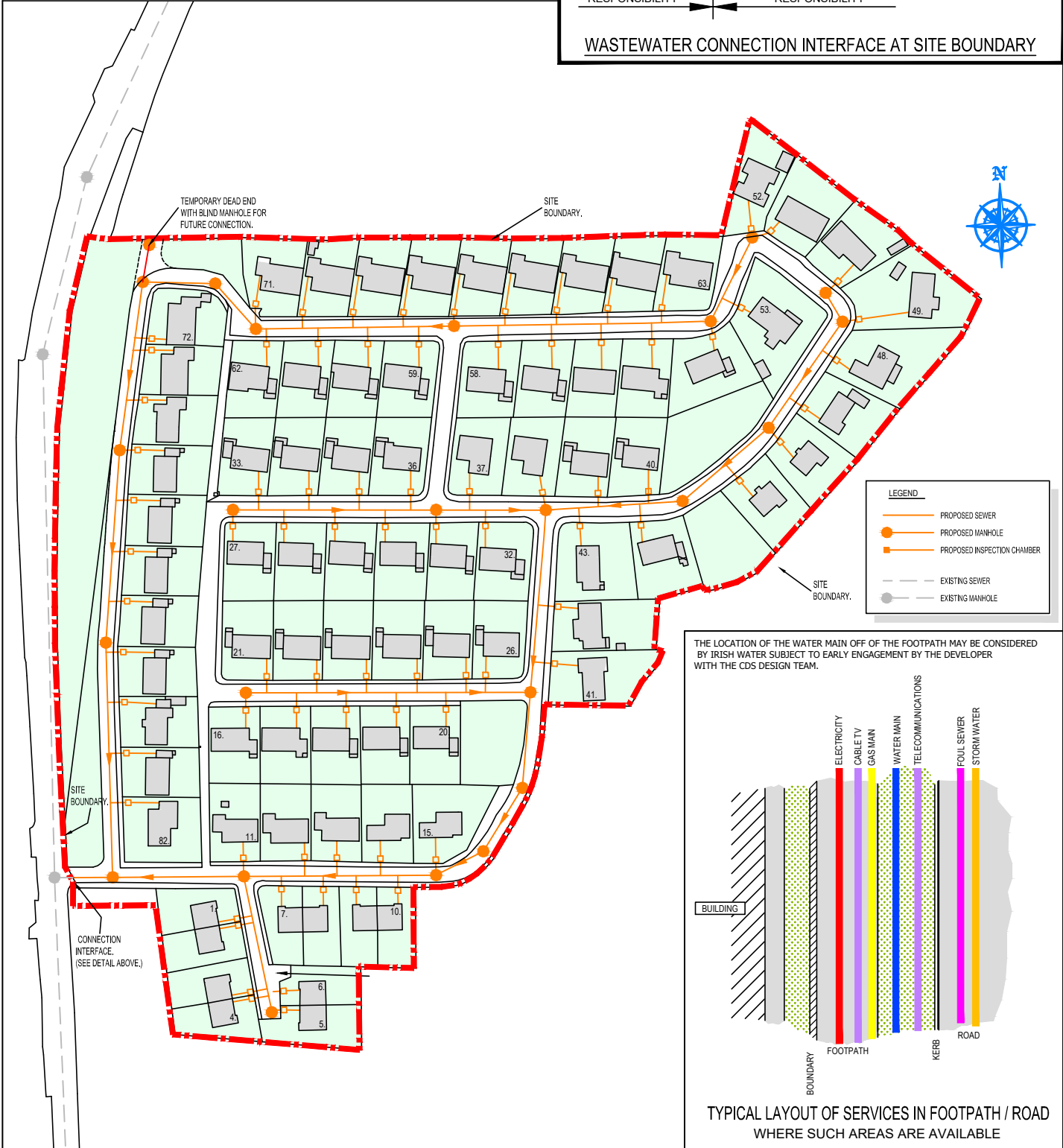
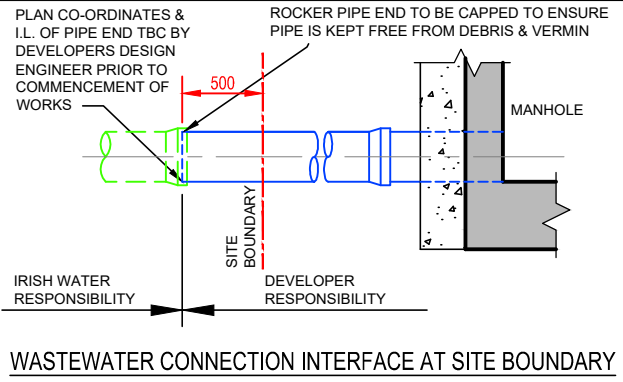
A / B MAINTENANCE RESPONSIBILITY OF THE WASTEWATER SERVICE CONNECTIONS FROM THE SEWER TO THE BOUNDARY IS SET OUT IN THE PIPE MAINTENANCE RESPONSIBILITY DIAGRAMS INCLUDED ON THE IW WEBSITE @ WWW.WATER.IE

	MAINTENANCE RESPONSIBILITY
(A) SEWER	IRISH WATER
(B-C) SERVICE CONNECTION (INCLUDING SADDLE)	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

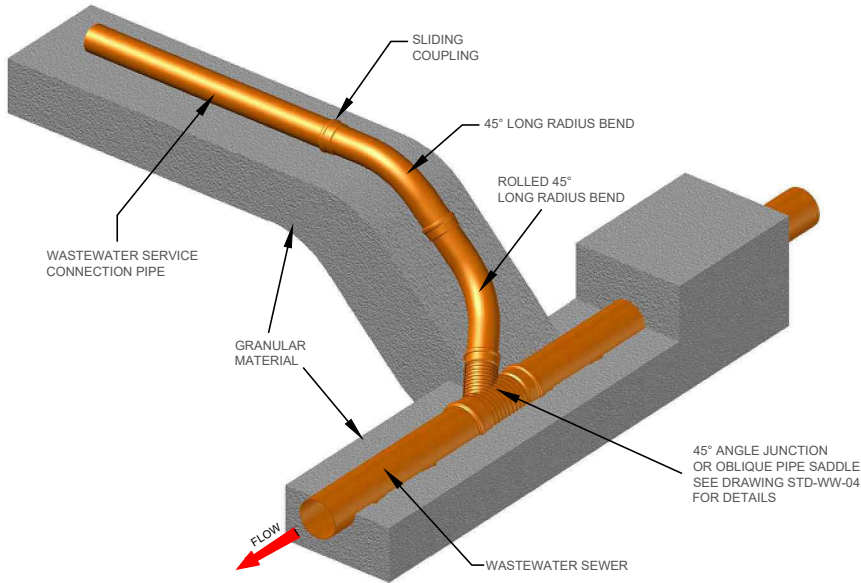
	<p style="text-align: center;"><b>STANDARD DETAILS - WASTEWATER</b></p>					SCALE NOT TO SCALE	DATE SEPT. 2015
	TITLE <p style="text-align: center;"><b>WASTEWATER SERVICE CONNECTION MAINTENANCE RESPONSIBILITY</b></p>					DRAWING No. <b>STD-WW-01</b>	REV <b>2</b>
	2 07/20 RH TOC B-C ownership revised MOD	1 11/17 JMC TOC Note reference added MOD	0 09/15 JMC TOC Initial Issue SL	No. Date Dwn Chk Description App			

1. THE MINIMUM SIZE FOR A GRAVITY FOUL SERVICE CONNECTION SHALL BE 100mm DIAMETER.
2. THE MINIMUM SIZE OF GRAVITY FOUL SEWER SHALL BE 225mm DIAMETER IN GENERAL. GRAVITY SEWERS ON BRANCHES SERVING 20 OR LESS PROPERTIES TO BE 150mm DIAMETER SUBJECT TO AGREEMENT WITH IRISH WATER.
3. THE MINIMUM SIZE FOR RISING MAINS SHALL NOT BE LESS THAN 80mm & THE DESIRED MINIMUM SIZE OF RISING MAIN SHALL BE 100mm DIAMETER.
4. EACH PROPERTY SHALL HAVE A SEPARATE WASTE WATER SERVICE CONNECTION. A CONNECTION SHALL NOT BE TAKEN FROM AN EXISTING SERVICE CONNECTION.
5. FOR SITES WITH HIGH DENSITY DEVELOPMENTS, EARLY ENGAGEMENT IS REQUIRED IN RELATION TO AGREEING A CO-ORDINATED UTILITY SERVICES LAYOUT PLAN TO ENSURE THAT THE REQUIRED SEPARATION DISTANCES ARE ACHIEVED BETWEEN THE VARIOUS SERVICES.



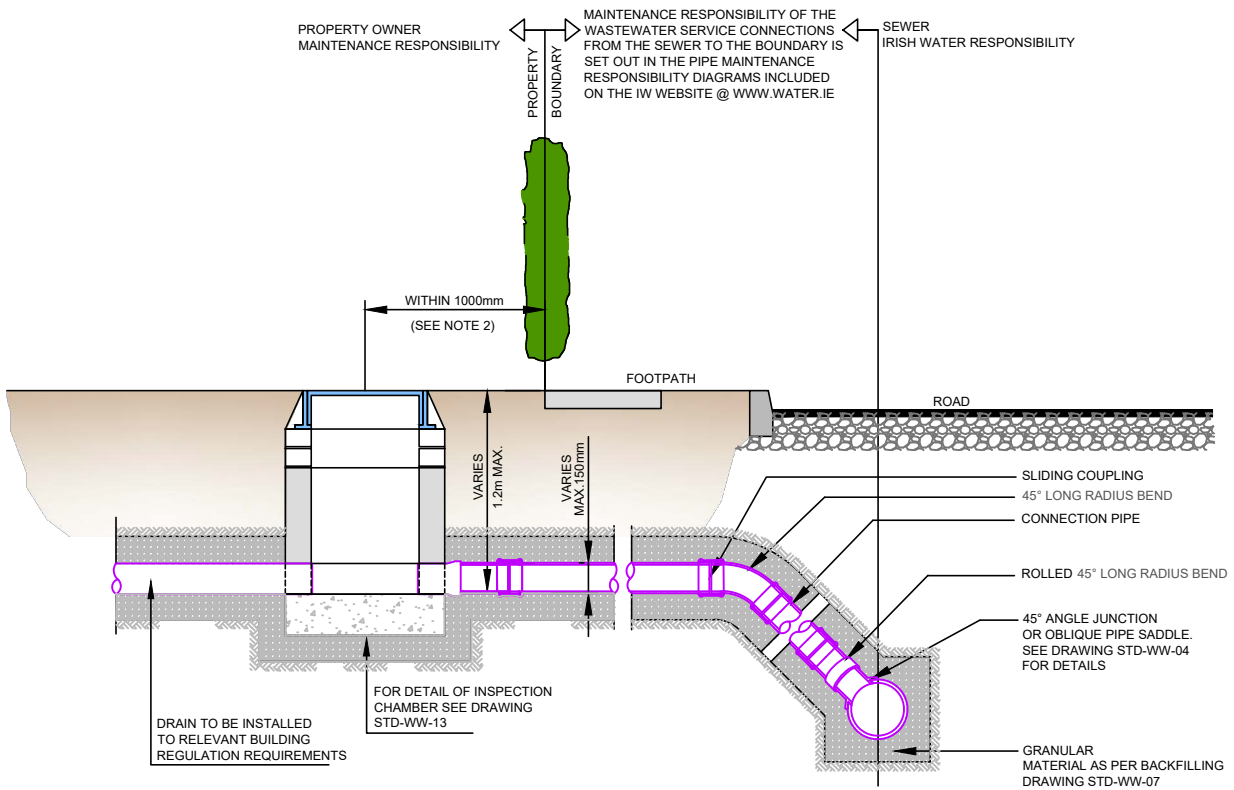
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

					STANDARD DETAILS - WASTEWATER			SCALE	DATE
					TITLE			NOT TO SCALE	SEPT. 2015
					TYPICAL LAYOUT FOR SEWER WITHIN NEW DEVELOPMENTS			DRAWING No.	REV
								STD-WW-02	2
No.	Date	Drn	Chk	Description	App				
2	07/20	RH	TOC	Connection Interface Detail added Dead end future connection shown Notes Updated.	MOD				
1	11/17	JMC	TOC	Updated Note 2	MOD				
0	09/15	JMC	TOC	Initial Issue	SL				



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AN INSPECTION CHAMBER SHOULD BE LOCATED AT OR WITHIN 1m OF THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTLAGE, IF PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. ANY PIPE 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.

**3D VIEW SHOWING SERVICE CONNECTION PIPEWORK**



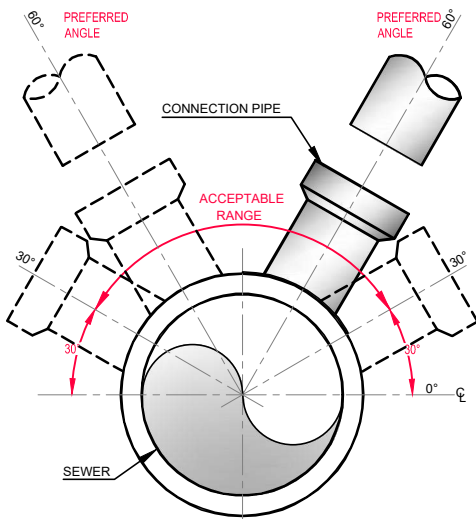
**SECTION SHOWING DRAIN AND SERVICE CONNECTION PIPEWORK**

PIPE SIZE (mm)	GRADIENT
100	1:40 - 1:80

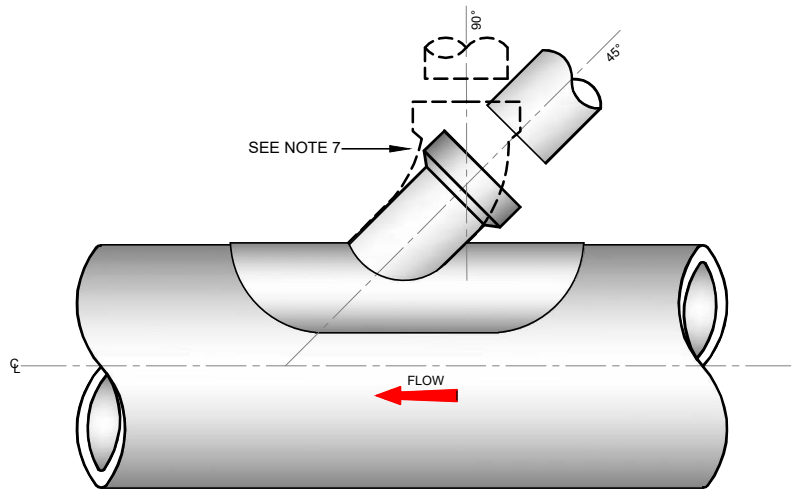
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

						<b>STANDARD DETAILS - WASTEWATER</b>	SCALE	DATE	
							NOT TO SCALE	SEPT. 2015	
	2	07/20	RH	TOC	Service connection responsibility revised Concrete surround at saddle removed 3D view added.		MOD	DRAWING No.	REV
	1	11/17	JMC	TOC	Updated Notes		MOD	<b>STD-WW-03</b>	<b>2</b>
0	09/15	JMC	TOC	Initial Issue	SL	<b>DRAIN AND SERVICE CONNECTION PIPEWORK</b>			
No.	Date	Drn	Chk	Description	App				

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 USERS WHEN THE SEWER IS BEING CONSTRUCTED. WHERE IT IS NECESSARY TO MAKE A 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 ACCEPTABLE RANGE OF 30° to 90°.
4. WHERE THE SERVICE PIPE CONNECTION WITHIN THE FOOTPRINT OF THE SELF LAY AGREEMENT IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER OF 300mm DIAMETER OR LESS, CONNECTIONS 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, 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 CONNECTION PIPE IS LESS THAN OR EQUAL TO HALF THE DIAMETER OF THE SEWER, THEN THE CONNECTION SHALL BE MADE USING A PREFORMED Y-BRANCH FITTING WITH A 45 DEG. SLOW BEND TO FORM THE CONNECTION TO THE WORKS.
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 TO ENSURE A WATERTIGHT JOINT. THE CONNECTING PIPE SHALL NOT PROTRUDE INTO THE SEWERS.
7. THE USE OF 90° "Y"-BRANCH OR SADDLE CONNECTIONS TO THE SEWER MAY BE ALLOWED, PROVIDED THE SADDLE OR BRANCH INCORPORATES A SWEEPED TEE CONNECTION TOWARDS THE DIRECTION OF FLOW OF THE SEWER.

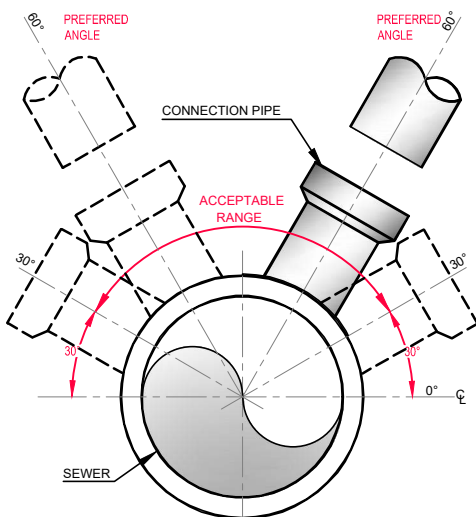


CROSS-SECTIONAL VIEW OF SEWER

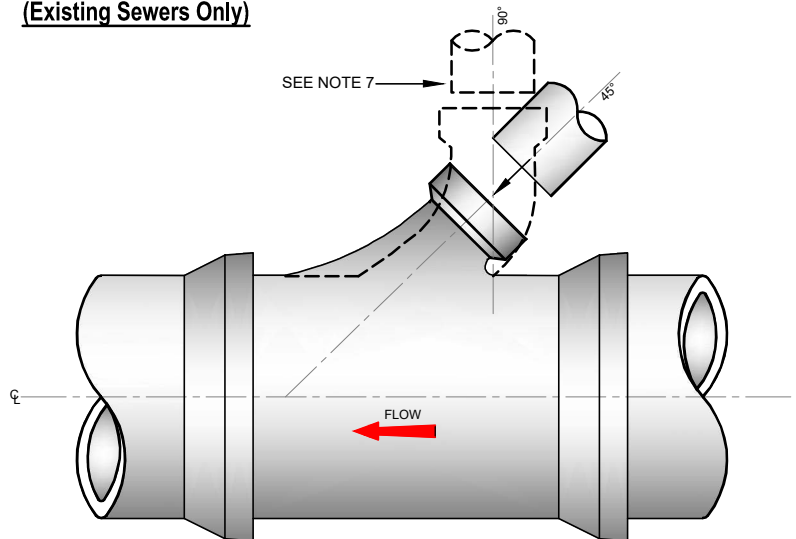


VIEW IN DIRECTION OF ARROW A

**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

						<b>STANDARD DETAILS - WASTEWATER</b>		SCALE NOT TO SCALE	DATE SEPT. 2015
						TITLE		DRAWING No.	REV
						TYPICAL SEWER / SERVICE PIPE CONNECTION		STD-WW-04	2
	No.	Date	Dwn	Chk	Description	App			
2	07/20	RH	TOC	Updated connection detail & notes	MOD				
1	11/17	JMC	TOC	Updated connection detail & notes	MOD				
0	09/15	JMC	TOC	Initial Issue	SL				

- SEPARATION DISTANCES BETWEEN SEWERS ASSOCIATED WITH THE WORKS FROM OTHER UTILITY PIPES AND ACCESSORIES SHALL BE IN ACCORDANCE WITH SECTION 3.5.9 TO 3.5.21 OF THE CODE OF PRACTICE. SEPARATION DISTANCES FOR ALL NEW INSTALLATIONS FROM EXISTING IRISH WATER PIPES SHALL BE AS OUTLINED IN SECTION 3.20 OF THE CODE OF PRACTICE.
- SPECIFIC SEPARATION CLEARANCE DISTANCES IN EXCESS OF THESE MINIMA SHALL BE PROVIDED FOR SERVICES SUCH AS GAS, ELECTRICITY, FIBRE-OPTIC OR OIL FILLED CABLES AS THE CASE MAY BE. THE PARTICULAR UTILITY PROVIDERS SHALL BE CONSULTED TO DETERMINE THESE MINIMUM SEPARATION DISTANCES AND EVIDENCE OF THIS CONSULTATION, WITH THE SPECIFIED SEPARATION DISTANCES, SHALL BE PROVIDED TO IRISH WATER AT DESIGN STAGE.
- NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN THE FOLLOWING DISTANCES FROM AN EXISTING WATER MAIN OR WASTEWATER RISING MAIN WHERE THE DEPTH OF THE EXISTING INFRASTRUCTURE DOES NOT EXCEED 1.5m:-

**HORIZONTAL**

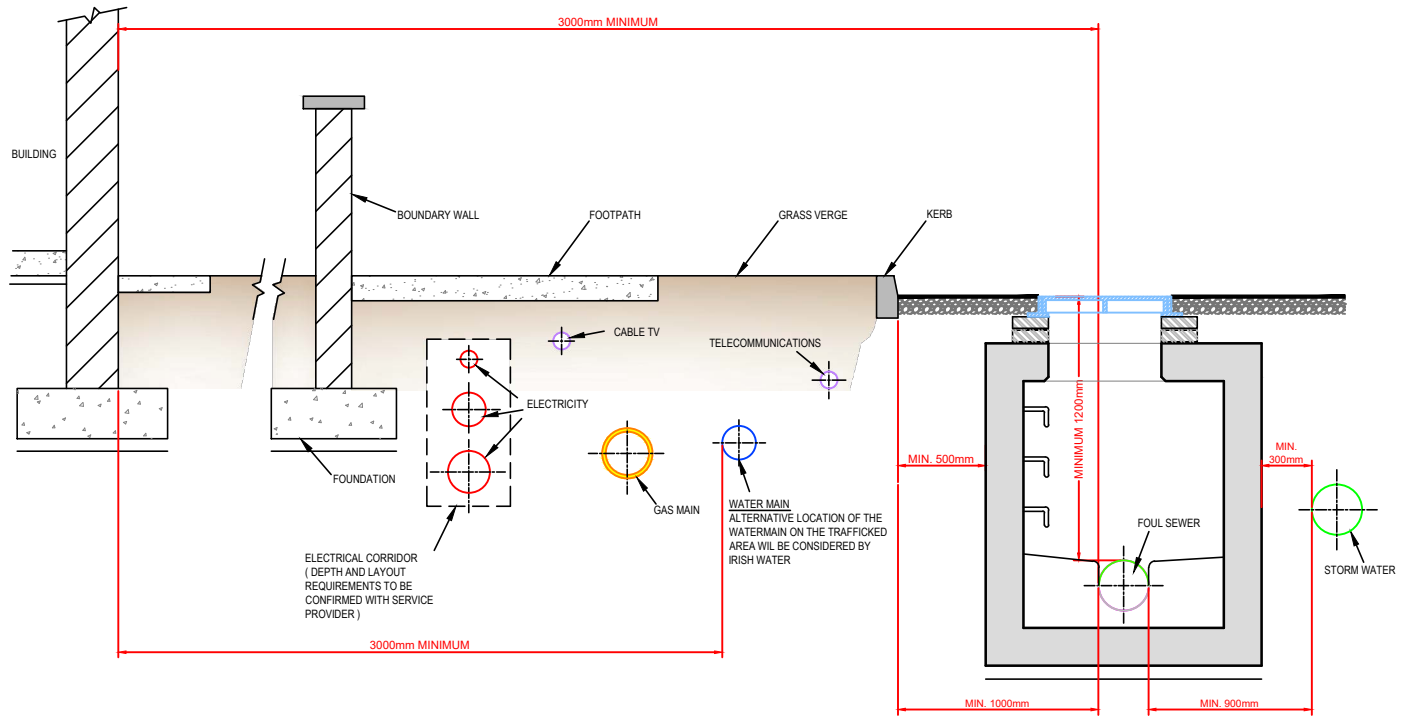
- 1m AT EITHER SIDE OF AN EXISTING PIPE LESS THAN 200mm IN DIAMETER.
- 2m AT EITHER SIDE OF AN EXISTING PIPE OF 200mm TO 350mm IN DIAMETER.
- 5m AT EITHER SIDE OF AN EXISTING PIPE OF 350mm OR GREATER IN DIAMETER.

WHERE DUCTS OR PIPES ARE TO BE LAID CLOSE TO AN EXISTING WATERMAIN OR SEWER IN THE OWNERSHIP OF IRISH WATER. NOTIFICATION IN WRITING SHALL BE PROVIDED A MINIMUM OF 10 DAYS AHEAD OF ADVANCEMENT OF THE WORK. THIS ALSO APPLIES WHERE THE DEPTH OF THE IRISH WATER WATERMAIN OR SEWER EXCEEDS 1.5m. IN ALL OF THESE INSTANCES, SPECIFIC WRITTEN APPROVAL WILL BE REQUIRED FROM IRISH WATER BEFORE PROCEEDING WITH THE WORK

NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN 1.5m DISTANCE OF A WASTEWATER SEWER.  
 REQUIREMENTS SHALL ALSO APPLY TO TRIAL HOLES OR SLIT TRENCHES TO LOCATE THE MAIN OR GAIN GROUND INFO DATA.  
 LARGER DIAMETERS >350mm DISTRIBUTION AND TRUNK MAINS, IRISH WATER MUST BE NOTIFIED AT LEAST 1 MONTH IN ADVANCE.

DEVELOPERS SHALL ALSO COMPLY WITH ANY NOTIFICATION REQUIREMENTS OF OTHER UTILITY PROVIDERS (ESB, GAS MAIN, TELECOMMUNICATION ETC.).

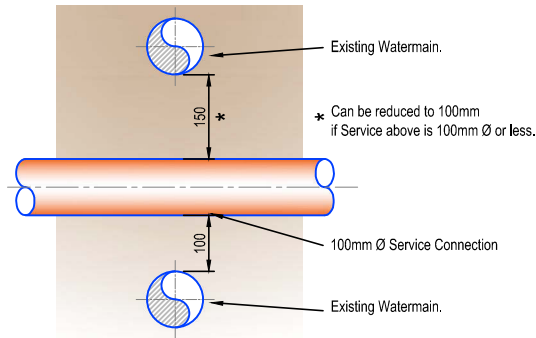
- DETAILED PROPOSALS, INCLUDING WORK METHOD STATEMENTS, INSURANCE CONFIRMATION AND DETAILS OF WORK COMPLETED OF A SIMILAR NATURE MUST BE SUBMITTED TO IRISH WATER FOR ITS CONSIDERATION BEFORE AGREEMENT WILL ISSUE. ALL SUCH WORKS IN THE VICINITY OF ARTERIAL WATER MAINS AND SEWERS (MAINS GREATER THAN 400mm) SHALL BE SUBJECT TO WRITTEN AGREEMENT WITH IRISH WATER BEFORE CONSTRUCTION COMMENCES ON SITE. THIS AGREEMENT SHALL ALSO INCLUDE ANY NECESSARY PROTECTION FOR WATER MAINS.
- ANY DAMAGE SHALL BE NOTIFIED IMMEDIATELY TO IRISH WATER. THE PERSON WHO CAUSES THE DAMAGE TO A SEWER MAIN OR FITTING WILL BE DEEMED TO HAVE COMMITTED AN OFFENCE UNDER SECTION 45 OF THE WATER SERVICES ACT 2007.
- UNDER NO CIRCUMSTANCES WILL IRISH WATER ACCEPT SEWER MAIN INSTALLATIONS UNDER STRUCTURES, EXISTING OR PROPOSED, OR IN CLOSE PROXIMITY TO ANY EXISTING STRUCTURES OR FEATURES THAT WILL INHIBIT ACCESS FOR POST INSTALLATION MAINTENANCE AND ACCESS.
- THE MINIMUM CLEAR HORIZONTAL DISTANCES SHOWN BELOW WILL BE INCREASED IF THE DEPTH OF THE SEWER EXCEEDS 3M OR IF THE DIAMETER IS GREATER THAN 375mm. THE MINIMUM CLEAR DISTANCES FOR PIPE DIAMETERS OF 450mm AND GREATER OR FOR DEPTHS EXCEEDING 4.0m SHALL BE BASED ON SPECIFIC CONSULTATION WITH IRISH WATER. THESE SEPARATION DISTANCES SHALL ALSO APPLY TO SEPARATION FROM EXISTING STRUCTURES, INCLUDING ATTENUATION TANKS AND SWALES.
- THE EXTERNAL FACES OF MANHOLES SHALL BE AT LEAST 0.5m FROM THE EXTERNAL FACE OF THE KERB LINE.
- THE EXTERNAL WALL OF THE SEWER IS TO BE AT LEAST 1.0m FROM THE EXTERNAL FACE OF THE KERB LINE.
- WHERE DESIGN DEVIATES FROM TYPICAL DETAILS, THE LAYOUT SHALL BE SUBMITTED TO IRISH WATER FOR REVIEW AND AGREEMENT, WHICH IS TO BE OBTAINED IN WRITING BEFORE WORK COMMENCES ..



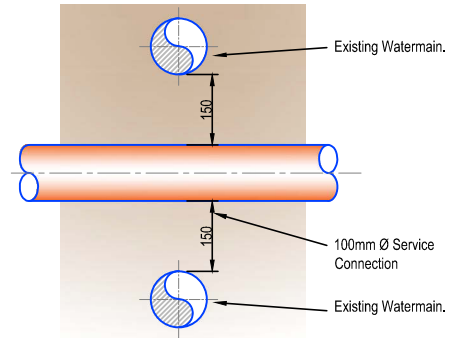
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

					<b>STANDARD DETAILS - WASTEWATER</b>		SCALE NOT TO SCALE	DATE SEPT. 2015
					TITLE		DRAWING No.	REV
					TYPICAL SERVICE LAYOUT INDICATING SEPARATION DISTANCES		STD-WW-05	2
	2	07/20	RH	TOC	Separation distances to sewers added, updated notes	MOD		
	1	11/17	JMC	TOC	Updated notes	MOD		
0	09/15	JMC	TOC	Initial Issue	SL			
No.	Date	Dwn	Chk	Description	App			

## SERVICE CONNECTIONS



**Vertical Separation required between 100mm Ø Service Connections and other Irish Water Services at Crossings in Non-Trafficked Green Areas, Verges and Footpaths**

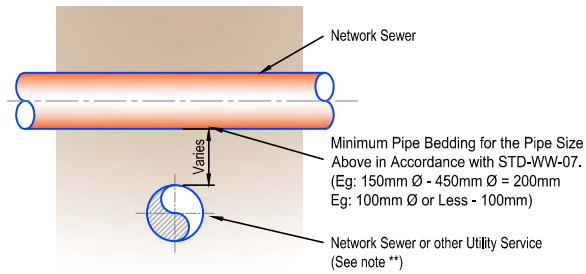


**Vertical Separation required between 100mm Ø Service Connections and other Irish Water Services at Crossings in Trafficked Areas/Roads**

\*\* Separation distances for wastewater service connection to other utility services will be as shown, as a minimum, and may be increased if required by the other Utility Company.

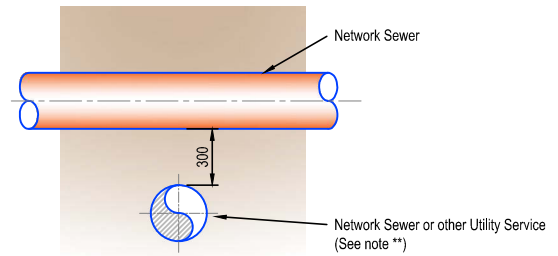
\*\* Separation distances for wastewater service connection to other utility services will be as shown, as a minimum, and may be increased if required by the other Utility Company.

## NETWORK FOUL AND PIPE BELOW



**Sewer Crossings (Foul & Storm). Minimum Pipe Bedding under Upper Pipe to be Achieved. Applies to Non-Trafficked Areas Only.**

\*\* Separation distances for wastewater service connection to other utility services will be as shown, as a minimum, and may be increased if required by the other Utility Company.



**Sewer Crossings (Foul & Storm). Minimum Pipe Bedding under Upper Pipe to be Achieved. Applies to Trafficked Areas.**

\*\* Separation distances for wastewater service connection to other utility services will be as shown, as a minimum, and may be increased if required by the other Utility Company.

	Separation distance between Service Connection above and Irish Water pipe below.	Separation distance between Service Connection below and Irish Water pipe above if pipe is 100mm Ø or less.	Separation distance between Service Connection below and pipe above if pipe exceeds 100mm Ø.	Separation distance between Network Sewer above and pipe below.	Separation distance between Network Sewer below and pipe above.
Non Trafficked Areas	100mm	100mm	150mm	Pipe bedding depth of the upper pipe.	Pipe bedding depth of the pipe below.
Trafficked Areas	150mm	150mm	150mm	300mm	300mm

\*\* Separation distances for wastewater service connection to other utility services will be as shown, as a minimum, and may be increased if required by the other Utility Company.

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

	<b>STANDARD DETAILS - WASTEWATER</b>					SCALE	DATE	
						NOT TO SCALE	FEB. 2020	
	TITLE					DRAWING No.		REV
	WASTEWATER SERVICE CONNECTION VERTICAL SEPARATION DISTANCES					STD-WW- 05A		0
0	07/20	RH	TOC	Initial Issue	MOD			
No.	Date	Drm	Chk	Description	App			



**METHOD STATEMENTS:**  
 ALL WORKS SHALL BE CARRIED  
 OUT IN ACCORDANCE WITH BS 5837 AND INFORMED BY  
 NJUG VOLUME 4

**PRECAUTION AREA:**

EXCAVATIONS FOR PIPEWORK SHOULD NOT BE UNDERTAKEN WITHIN THIS AREA, UNLESS AGREED WITH IRISH WATER.

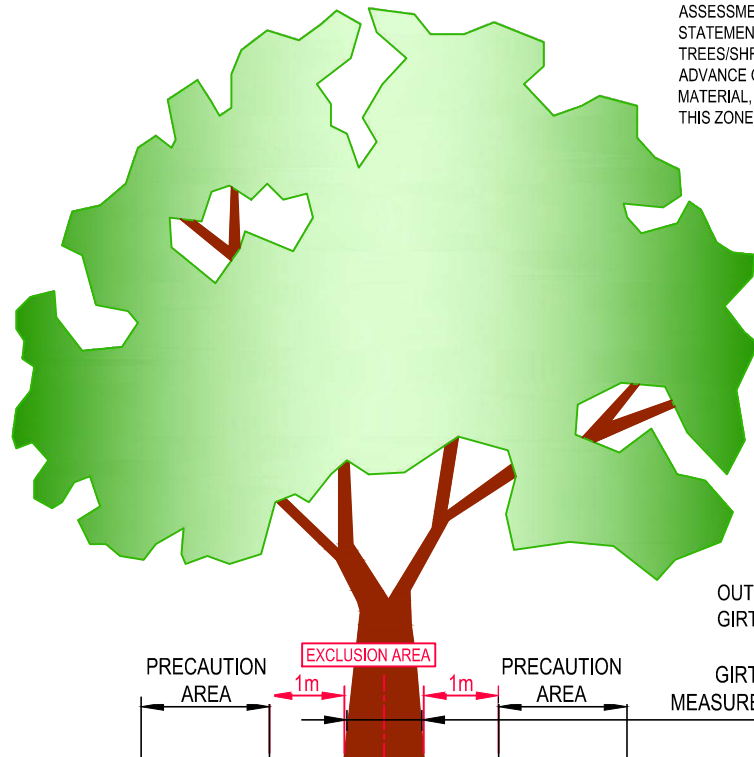
WORKS WITHIN THE PRECAUTION ZONE MUST BE SUPERVISED BY A QUALIFIED ARBORIST. WORKS SHALL BE SUBJECT OF A CLEAR METHOD STATEMENT OUTLINING ALL WORKS ADJACENT TO THE TREES/SHRUBS WHICH IS TO BE PREPARED & AGREED IN ADVANCE OF THE WORKS.

MATERIAL, PLANT & SPOIL SHALL NOT BE STORED WITHIN THIS ZONE.

**EXCLUSION AREA:**

WORKS IN THIS AREA ARE TO BE AVOIDED, UNLESS ABSOLUTELY NECESSARY & AGREED WITH IRISH WATER.

EXCAVATIONS FOR PIPEWORK SHOULD NOT BE UNDERTAKEN WITHIN THIS AREA, UNLESS NECESSARY AND NO OTHER OPTIONS AVAILABLE. WORKS WITHIN THE EXCLUSION ZONE MUST BE SUPERVISED BY A QUALIFIED ARBORIST AND AGREED WITH IRISH WATER. WORKS SHALL BE SUBJECT OF AN ARBORICULTURAL IMPACT ASSESSMENT AS PER BS 5837 & A CLEAR METHOD STATEMENT OUTLINING ALL WORKS ADJACENT TO THE TREES/SHRUBS IS TO BE PREPARED AND AGREED IN ADVANCE OF THE WORKS. MATERIAL, PLANT & SPOIL SHALL NOT BE STORED WITHIN THIS ZONE.



OUTSIDE RADIUS OF PRECAUTION AREA = 4 x GIRTH OF TREE

GIRTH (CIRCUMFERENCE OF TREE MEASURED AT 1.5m ABOVE GROUND LEVEL)

PREVENTION MEASURES REQUIRED IN LINE WITH LANDSCAPING DESIGN & SPECIAL PROTECTION REQUIRED. (e.g. BY USE OF APPROPRIATE BARRIERS, HIGH PERFORMANCE JOINTS, OR BY USE OF POLYETHYLENE WITH WELDED JOINTS). THE LANDSCAPE DESIGN AND DETAILS OF THE SPECIAL PROTECTION MEASURES MUST BE AGREED WITH IRISH WATER

# EXISTING PLANTING:

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

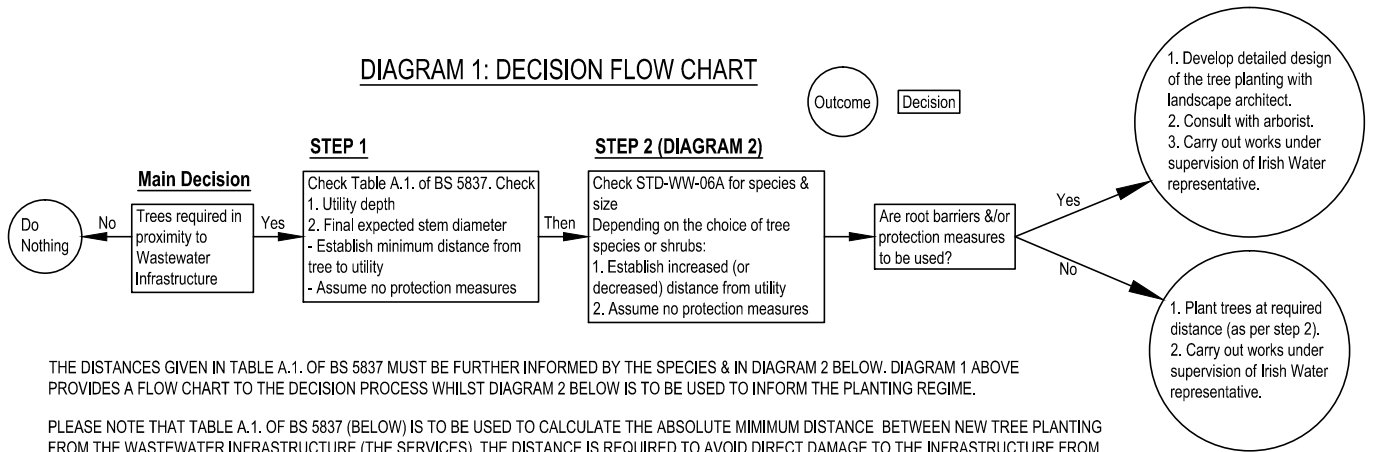


No.	Date	Dwn	Chk	Description	App
2	11/17	JM	TOC	Revised to suit I.L.I recommendations	MOD
1	08/16	JM	TOC	Added new section & notes	MOD
0	09/15	JM	TOC	Initial Issue	SL

STANDARD DETAILS - WASTEWATER	
TITLE	
<b>RESTRICTIONS ON WASTEWATER            INFRASTRUCTURE WORKS            ADJACENT TO TREES</b>	

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. <b>STD-WW-06</b>	REV <b>2</b>

## DIAGRAM 1: DECISION FLOW CHART



THE DISTANCES GIVEN IN TABLE A.1. OF BS 5837 MUST BE FURTHER INFORMED BY THE SPECIES & IN DIAGRAM 2 BELOW. DIAGRAM 1 ABOVE PROVIDES A FLOW CHART TO THE DECISION PROCESS WHILST DIAGRAM 2 BELOW IS TO BE USED TO INFORM THE PLANTING REGIME.

PLEASE NOTE THAT TABLE A.1. OF BS 5837 (BELOW) IS TO BE USED TO CALCULATE THE ABSOLUTE MINIMUM DISTANCE BETWEEN NEW TREE PLANTING FROM THE WASTEWATER INFRASTRUCTURE (THE SERVICES). THE DISTANCE IS REQUIRED TO AVOID DIRECT DAMAGE TO THE INFRASTRUCTURE FROM FUTURE GROWTH. THE DISTANCE IS A FUNCTION OF THE DEPTH OF THE SERVICES AND THE (FINAL EXPECTED) STEM DIAMETER OF THE TREE AT MATURITY (i.e. FINAL EXPECTED GROWTH).

TABLE A.1. BS 5837	Minimum distance between young trees or new planting & structures, in metres (m)		
	Final stem dia. < 300mm	Final stem dia. 300mm to 600mm	Final stem dia. > 600mm
Services			
< 1m deep	0.5	1.5	3.0
> 1m deep	-	1.0	2.0

THUS FOR EXAMPLE:

- FOR A SERVICE LESS THAN 1 METRE DEEP, THE MINIMUM DISTANCE IS TO BE 1.5m FOR A TREE BETWEEN 300 AND 600mm STEM DIAMETER AT MATURITY.
- FOR A SERVICE GREATER THAN 1 METRE DEEP, THE MINIMUM DISTANCE IS TO BE 1.0m FOR A TREE BETWEEN 300 AND 600mm STEM DIAMETER AT MATURITY.

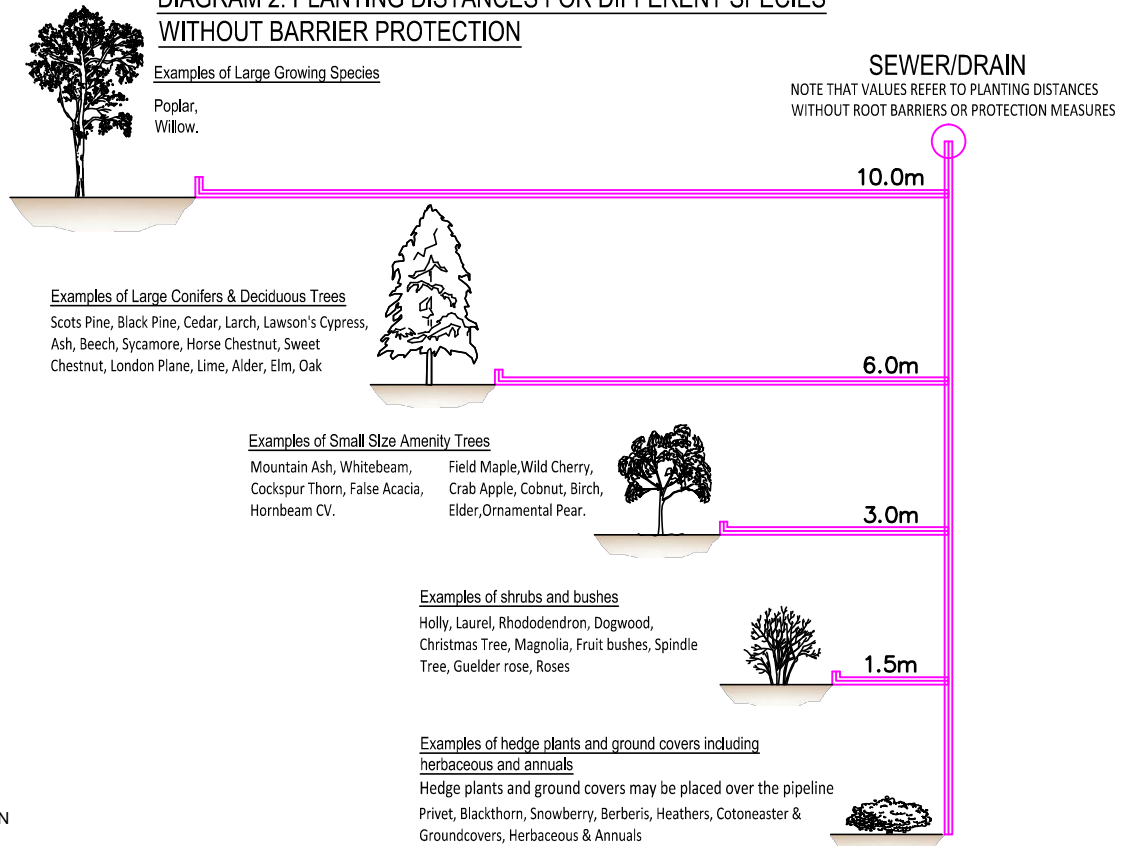
### NOTE: RESTRICTIONS RELATE TO INFRASTRUCTURE WITHOUT ROOT INTRUSION PROTECTION.

THE DESIGN OF LANDSCAPING SHALL BE UNDERTAKEN IN CONJUNCTION WITH THE DESIGN OF WASTEWATER INFRASTRUCTURE, ETC. THE TREE/BUSH/SHRUB SHALL NOT BE LOCATED CLOSER TO THE WASTEWATER INFRASTRUCTURE THAN INDICATED ABOVE, EXCEPT WHERE SPECIAL PROTECTION MEASURES ARE PROVIDED. WHERE THERE IS A RISK OF TREE/ROOT INTRUSION, THE WASTEWATER INFRASTRUCTURE SHALL BE RESISTANT TO TREE ROOT INGRESS (e.g. BY USE OF APPROPRIATE BARRIERS, HIGH PERFORMANCE JOINTS, OR BY USE OF POLYETHYLENE WITH WELDED JOINTS FOR RISING MAINS). THE LANDSCAPE DESIGN AND DETAILS OF THE SPECIAL PROTECTION MEASURES MUST BE AGREED WITH IRISH WATER

A TREE SHALL NOT BE PLANTED DIRECTLY OVER WASTEWATER INFRASTRUCTURE WHERE EXCAVATION OF THE INFRASTRUCTURE WOULD REQUIRE REMOVAL OF THE TREE UNLESS SUCH PLANTING IS AGREED WITH IRISH WATER AND IN GENERAL ONLY SHALLOW ROOTING SHRUBS SHALL BE PLANTED CLOSE TO WASTEWATER INFRASTRUCTURE.

PLEASE ENSURE THAT THESE DISTANCES ARE ADHERED TO IN ORDER TO PROTECT THE TREES FROM ANY FUTURE MAINTENANCE. REFERENCE SHOULD ALSO BE MADE TO BS 5837, BS 8545 AND THE NJUG GUIDELINES VOLUME 4 FOR FURTHER INFORMATION.

## DIAGRAM 2: PLANTING DISTANCES FOR DIFFERENT SPECIES WITHOUT BARRIER PROTECTION

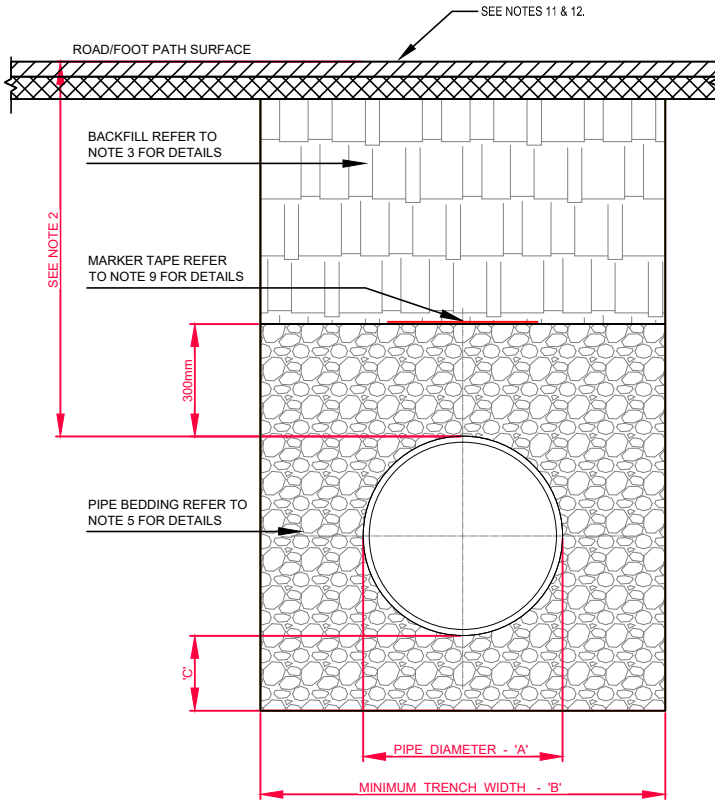


NOTE: OTHER SPECIES NOT NAMED TO BE PLANTED TO THE SAME SPACINGS DEPENDING ON ROOT FORMATION.

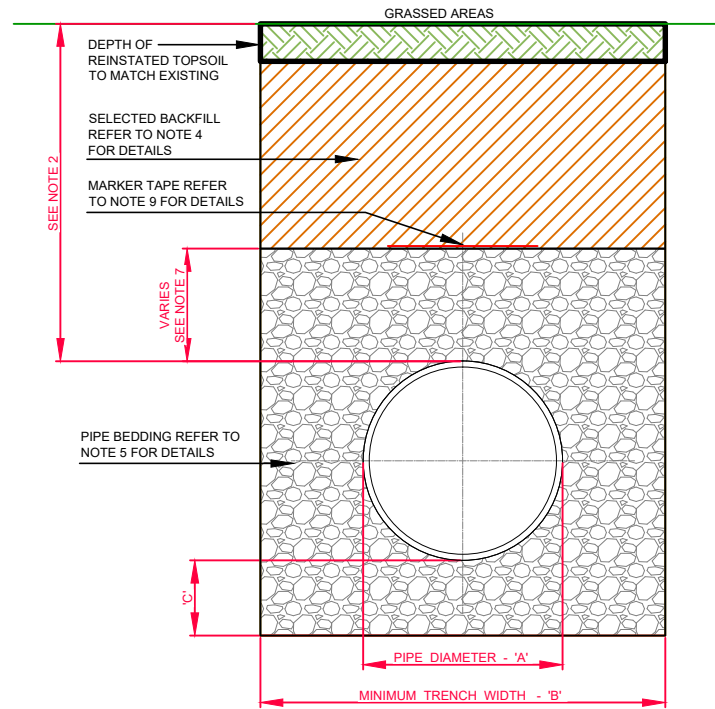
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

							<b>STANDARD DETAILS - WASTEWATER</b>		SCALE	DATE
									NOT TO SCALE	JUL. 2017
							TITLE		DRAWING No.	REV
							<b>RESTRICTIONS ON NEW TREES / SHRUBS PLANTING ADJACENT TO SEWERS</b>		<b>STD-WW-06A</b>	<b>1</b>
	No.	Date	Drn	Chk	Description	App				
1	07/20	RH	TOC	Text Revised	MOD					
0	11/17	JMC	TOC	Initial Issue	MOD					

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) 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), DRIVEWAYS, FOOTWAYS, 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.
  - B) DRIVEWAYS, FOOTWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. MEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9 M.
  - C) DEPTHS OF SEWERS IN GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
  - D) AGRICULTURAL LAND AND PUBLIC OPEN SPACE - DEPTH NOT LESS THAN 0.9 M.
  - E) OTHER ROADWAYS, 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.
3. CLAUSE 804 / 808 MATERIAL IN ACCORDANCE WITH THE TRANSPORT INFRASTRUCTURE IRELAND 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 TRANSPORT INFRASTRUCTURE IRELAND 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 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 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 IRISH WATER. PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01. THE PIPE BEDDING GRANULAR MATERIAL SHALL BE 14mm TO 5mm (  $\frac{3}{4}$  ) GRADED AGGREGATE OR 10mm (  $\frac{3}{4}$  ) SINGLE SIZED AGGREGATE TO IS EN 13242. CONCRETE BED, HAUNCH, & SURROUND, WHERE REQUIRED, SHALL BE TO STD-WW-08.
5. 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 TRANSPORT INFRASTRUCTURE IRELAND 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.
6. 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.
7. 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 TRANSPORT INFRASTRUCTURE IRELAND SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
8. 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. 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.
9. TRENCH WIDTHS FOR PIPE SIZES  $\leq 80$ mm MAY BE  $< 500$ mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.
10. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
11. 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.



**CROSS SECTION IN ROADS**



**CROSS SECTION IN GRASSED AREAS**

PIPE DIAMETER 'A' (mm)	TRENCH WIDTH 'B' (mm)
$\leq 80$ 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)
$\leq 100$	100
150 - 450	200

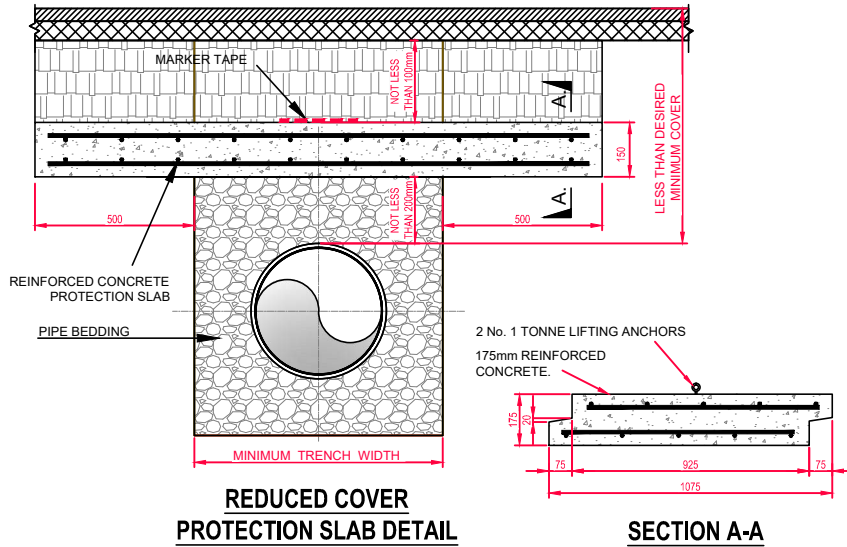
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

					STANDARD DETAILS - WASTEWATER		SCALE	DATE
					TITLE		NOT TO SCALE	SEPT. 2015
	2	07/20	RH	TOC	Modified trench width table Minor edit to note 5 Note 9 revised re marker tape		MOD	
	1	11/17	JMC	TOC	Updated & Added Notes		MOD	
0	09/15	JMC	TOC	Initial Issue		SL		
No.	Date	Drm	Chk	Description		App		

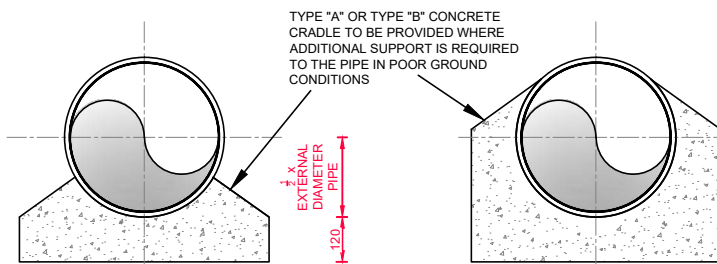
TRENCH BACKFILL AND BEDDING

STD-WW-07

2

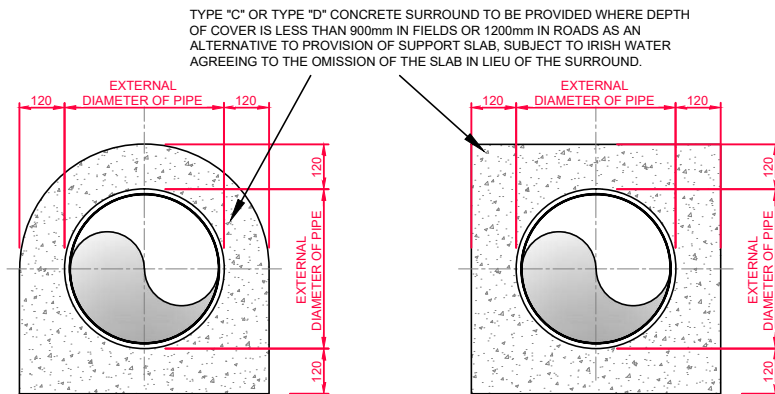


- FOR ANY SLABbing WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR REVIEW BY IRISH WATER.
- MARKER TAPE TO BE PLACED ABOVE THE SLAB AND ALONG THE DIRECTION OF THE PIPELINE
- CONCRETE TO BE GRADE C30/35
- MINIMUM COVER TO STEEL REINFORCEMENT = 40mm
- SLABS TO BE DESIGNED FOR USE UNDER A HB25 LOAD IN ACCORDANCE WITH BS5400-2. DESIGN TO BE SUBMITTED TO IRISH WATER FOR ASSESSMENT PRIOR TO INSTALLATION.
- 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.
- IF DIRECTION OF PIPELINE AND DIRECTION OF TRAFFIC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE AGAINST THE DIRECTION OF TRAFFIC FLOW.
- 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.



**TYPE 'A' (BED)**

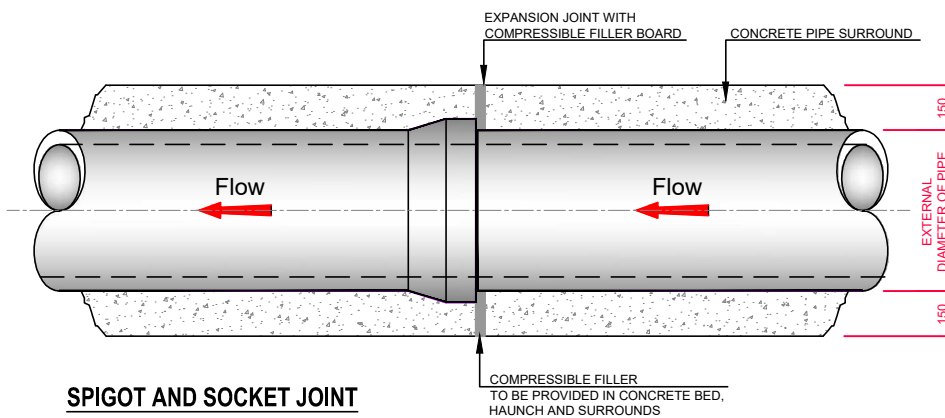
**TYPE 'B' (HAUNCH)**



**TYPE 'C' (SURROUND)**

**TYPE 'D' (SURROUND)**

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- CONCRETE BED AND HAUNCHES MAY BE REQUIRED TO PROVIDE ADDITIONAL SUPPORT IN POOR GROUND CONDITIONS. PROPOSALS TO BE PROVIDED TO IRISH WATER WITH GEOTECHNICAL REPORT SUPPORTING THEIR USE.
- CONCRETE SURROUNDS SHALL HAVE A MINIMUM THICKNESS OF 150mm WITH AN ABSOLUTE MINIMUM DEPTH OF COVER ABOVE THE EXTERNAL CROWN OF THE PIPE OF 750mm.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 AND TO BE GRADE C16/20 TO IS EN206
- 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 THICK.
- POLYETHYLENE AND uPVC PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
- BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.



**SPIGOT AND SOCKET JOINT**

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



No.	Date	Drn	Chk	Description	App
1	07/20	RH	TOC	Protection slab detail added and notes updated, title updated.	MOD
0	09/15	JMC	TOC	Initial Issue	SL

STANDARD DETAILS - WASTEWATER	
TITLE	CONCRETE PROTECTION SLAB, BED, HAUNCH, AND SURROUND, TO WASTEWATER PIPES

SCALE	NOT TO SCALE	DATE	SEPT. 2015
DRAWING No.	STD-WW-08	REV	1

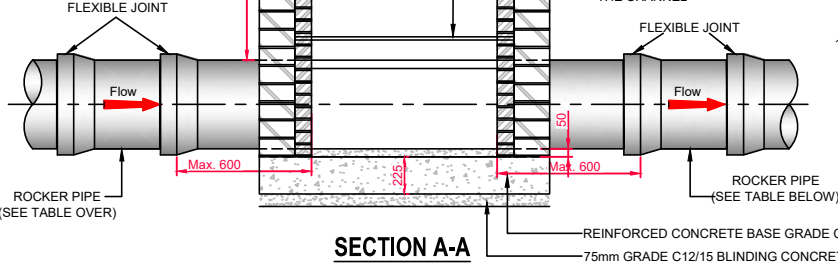


MANHOLE COVER AND FRAME SHALL COMPLY TO IS EN 124 AND BS 7903 (ALL CLASS D400 COVERS SHALL HAVE MIN. FRAME DEPTH 100 OR 150mm) MIN. OPE. = 600 x 600mm or 600mm Ø.

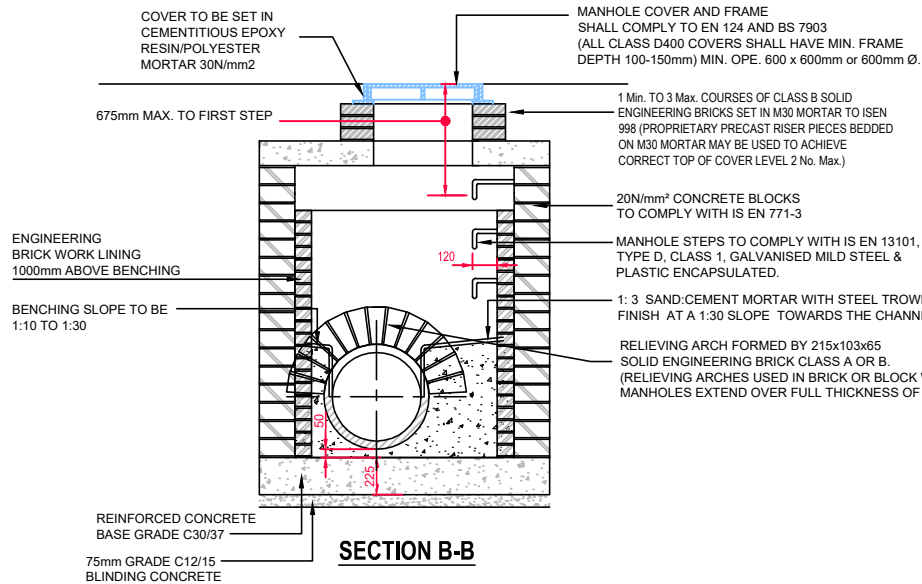
COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm<sup>2</sup>

1 Min. TO 3 Max. COURSES OF CLASS B SOLID ENGINEERING BRICKS SET IN M30 MORTAR TO IS EN 998 (PROPRIETARY PRECAST RISER PIECES BEDDED ON M30 MORTAR MAY BE USED TO ACHIEVE CORRECT TOP OF COVER LEVEL 2 No. Max.)

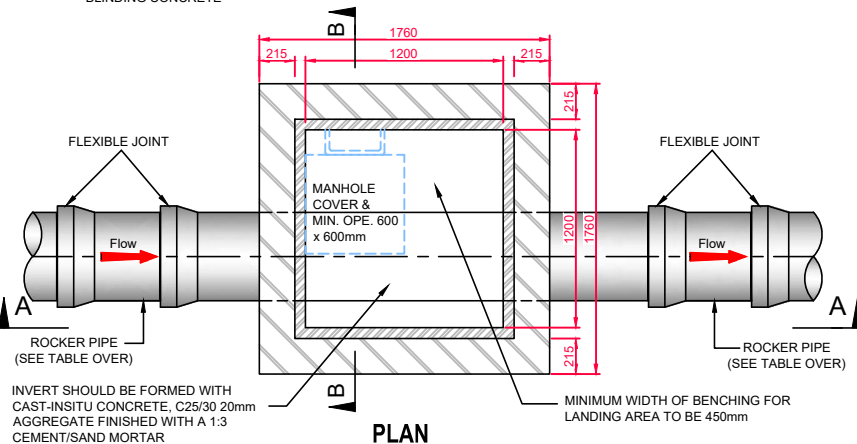
ENGINEERING BRICK WORK LINING 1000mm ABOVE BENCHING



SECTION A-A



SECTION B-B



PLAN

INVERT SHOULD BE FORMED WITH CAST-IN-SITU CONCRETE, C25/30 20mm AGGREGATE FINISHED WITH A 1:3 CEMENT/SAND MORTAR

MINIMUM WIDTH OF BENCHING FOR LANDING AREA TO BE 450mm

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- SOLID BLOCKWORK TO BE OF HIGH STRENGTH (20N/mm<sup>2</sup>) TO IS EN 998. BLOCKWORK TO BE SET IN M20 MORTAR TO IS EN 998.
- MAXIMUM DEPTH OF BLOCK WORK MANHOLE IS 1.20m (THE USE OF BLOCK WORK IN DEEPER MANHOLES WILL BE CONSIDERED BUT SUCH USE WILL REQUIRE DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW).
- WALLS TO BE FLUSH POINTED AND NOT PLASTERED INTERNALLY, INTERNAL LINING OF ENGINEERING BRICK TO IS EN 771-1 TO A HEIGHT OF 1m ABOVE BENCHING. ENGINEERING BRICK TO BE BONDED TO BLOCKWORK USING ENGLISH GARDEN WALL BOND.
- STRUCTURAL DESIGN AND REINFORCEMENT DETAILS FOR ROOF AND BASE SLABS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. MANHOLE ROOFS SHALL CONSIST OF A 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 REVIEW AND COMPLIANCE WITH IS EN 1917 AND IS 420.
- COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW FROM IRISH WATER.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
- ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- 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.
- COVERS SHALL BE SET WITH RAPID HARDENING CEMENTITIOUS, EPOXY RESIN OR POLYESTER RESIN MORTAR FOR SETTING HARDENING MANHOLE COVERS & FRAMES, & SHALL HAVE A MINIMUM WORKING TIME OF 15 MINUTES. THE MORTAR SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 30N/mm<sup>2</sup> & A MINIMUM TENSILE STRENGTH OF 5N/mm<sup>2</sup> WITHIN 3 HOURS OF MIXING.

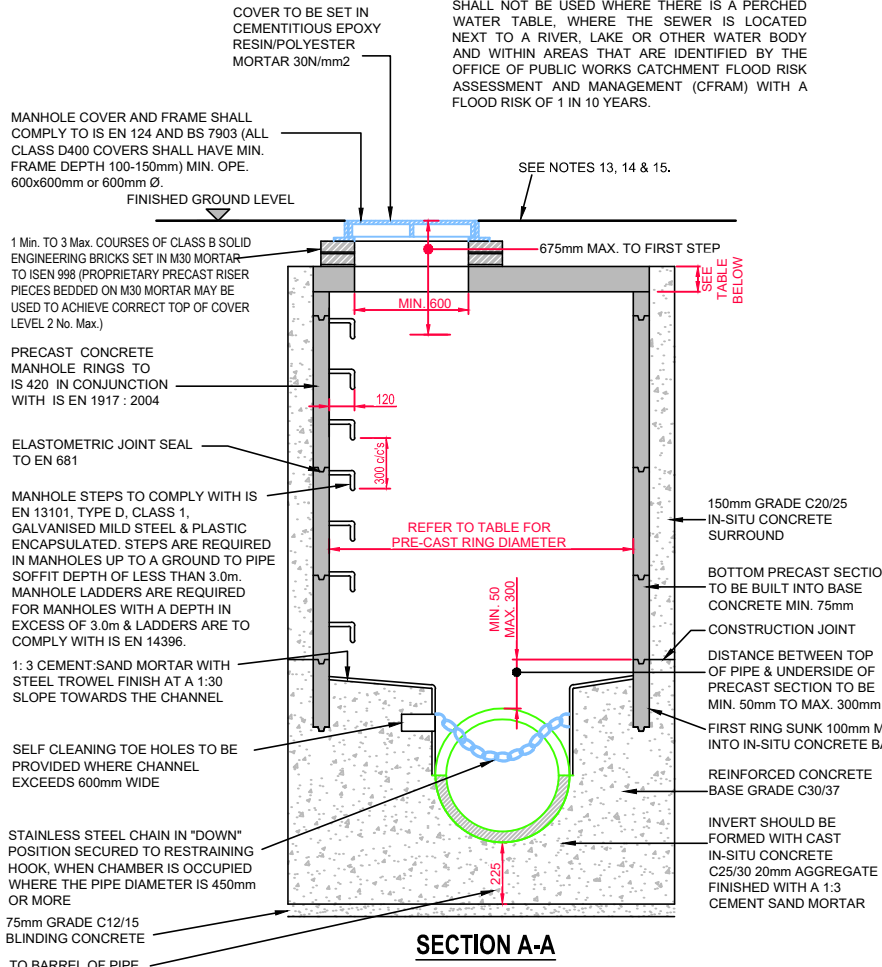
ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750	1000
GREATER THAN 750	1250

\* 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.

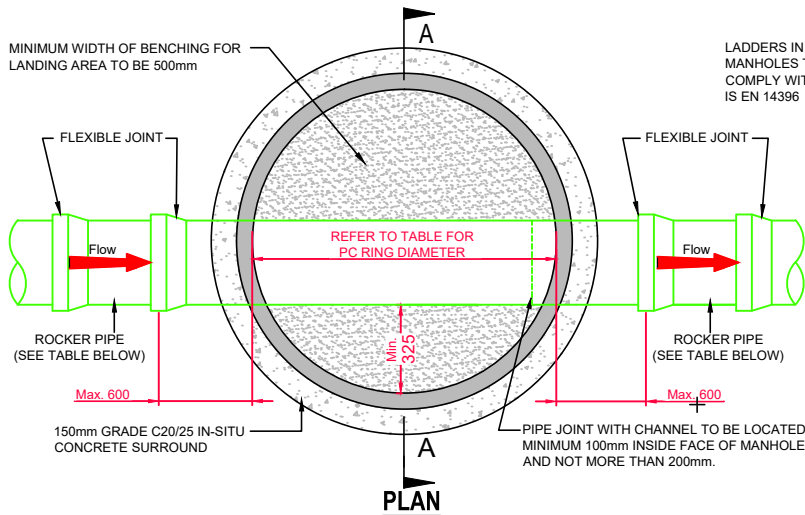
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT						STANDARD DETAILS - WASTEWATER		SCALE	DATE	
	3	07/20	RH	TOC	Bedding Mortar notes revised & notes updated	MOD	TITLE	NOT TO SCALE	SEPT. 2015	
	2	11/17	JMC	TOC	Added rocker pipe table, added & updated notes	MOD		DRAWING No.	REV	
	1	08/16	JMC	TOC	Added steps & revised access ope & cover notes	MOD		BLOCKWORK MANHOLE (< 450mm DIA.)	STD-WW-09	3
	0	09/15	JMC	TOC	Initial Issue	SL				
No.	Date	Drn	Chk	Description	App					

NOTE:  
 PRECAST CONCRETE MANHOLES SHALL ONLY BE USED WHERE THE WATER TABLE IS LOW. THEY SHALL NOT BE USED WHERE THERE IS A PERCHED WATER TABLE, WHERE THE SEWER IS LOCATED NEXT TO A RIVER, LAKE OR OTHER WATER BODY AND WITHIN 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.

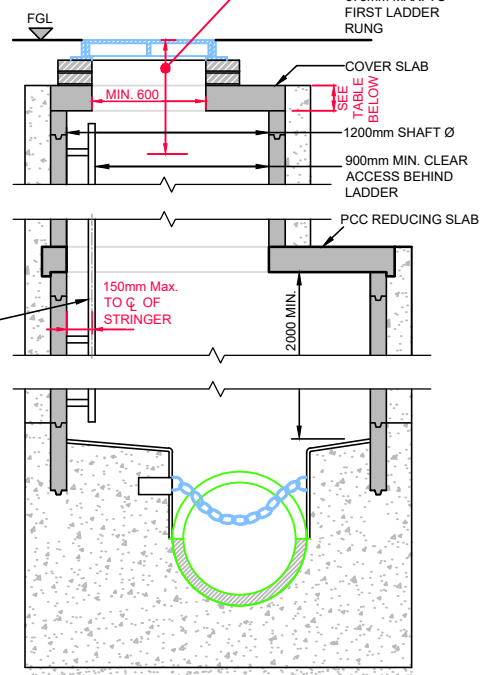


SECTION A-A



PLAN

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420.
- THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE.
- APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER REVIEW AND COMPLYING WITH IS EN 1719 AND IS 420.
- STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
- MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
- MANHOLE ROOFS SHALL CONSIST OF A RE-INFORCED 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 REVIEW AND COMPLIANCE WITH IS EN 1917.
- COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
- ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- 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.
- IF DEPTH FROM GROUND TO PIPE SOFFIT IS GREATER THAN 6m DEEP, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
- PROPRIETARY WATERTIGHT PCC MANHOLE RING SYSTEMS WITH A WALL THICKNESS > 125mm, & A WATER TIGHT JOINT SEALING SYSTEM, MAY BE USED WITHOUT CONCRETE SURROUND, SUBJECT TO THE GROUND WATER LEVEL AT THE MANHOLE BEING LOW, & SUBJECT TO REVIEW BY IRISH WATER.
- THE INTERNAL MANHOLE DIAMETERS SHOWN IN THE TABLE BELOW ARE MINIMUM DIMENSIONS AND WILL INCREASE DEPENDING ON THE NUMBER AND DIAMETER OF ADDITIONAL INLETS AND FINISHED WITH A 1:3 SAND/CEMENT FINISH TO SUIT FLOW OF INLETS AND OUTLET.



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

(NOTE: ON MANHOLES <1.5mØ, REDUCING SLAB NOT TO BE USED & PCC RINGS TO CONTINUE UP TO COVER SLAB)

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

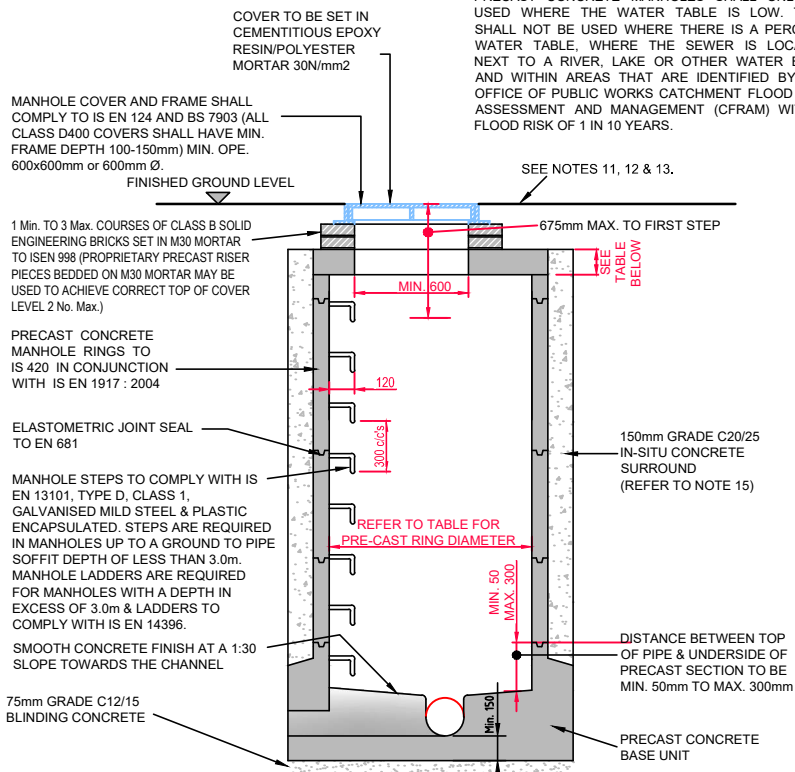
ROCKER PIPE LENGTH	
PIPE DIAMETER (mm)	ROCKER PIPE LENGTH (mm)
150 TO 600	600
GREATER THAN 600 TO 750 *	1000
GREATER THAN 750 *	1250

\* 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.

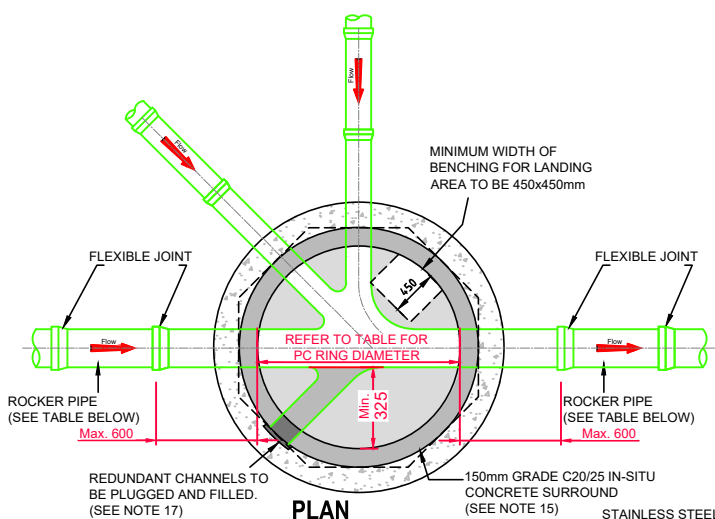
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

	3	07/20	RH	TOC	Notes Updated	MOD	<b>STANDARD DETAILS - WASTEWATER</b>	SCALE	DATE
	2	11/17	JMC	TOC	Added rocker pipe table, deep manhole detail, added & updated notes	MOD		TITLE	NOT TO SCALE
	1	08/16	JMC	TOC	Added steps & revised access ope & cover notes	MOD	<b>PRE-CAST CONCRETE MANHOLE WITH CAST IN-SITU BASE</b>	DRAWING No.	REV
	0	09/15	JMC	TOC	Initial Issue	SL		STD-WW-10	3
No.	Date	Drn	Chk	Description	App				

NOTE:  
 PRECAST CONCRETE MANHOLES SHALL ONLY BE USED WHERE THE WATER TABLE IS LOW. THEY SHALL NOT BE USED WHERE THERE IS A PERCHED WATER TABLE, WHERE THE SEWER IS LOCATED NEXT TO A RIVER, LAKE OR OTHER WATER BODY AND WITHIN 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.



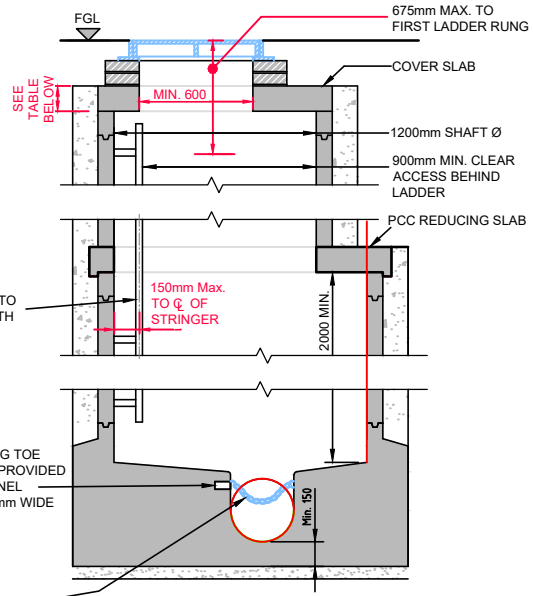
**SECTION A-A**



**PLAN**

NOTE:  
 IF FLEXIBLE PIPES ARE BEING USED, ROCKER PIPES ARE NOT REQUIRED.

STAINLESS STEEL CHAIN IN "DOWN" POSITION SECURED TO RESTRAINING HOOK, WHEN CHAMBER IS OCCUPIED WHERE THE PIPE DIAMETER IS 450mm OR MORE



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

(NOTE: ON MANHOLES <1.5mØ, REDUCING SLAB NOT TO BE USED & PCC RINGS TO CONTINUE UP TO COVER SLAB)

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

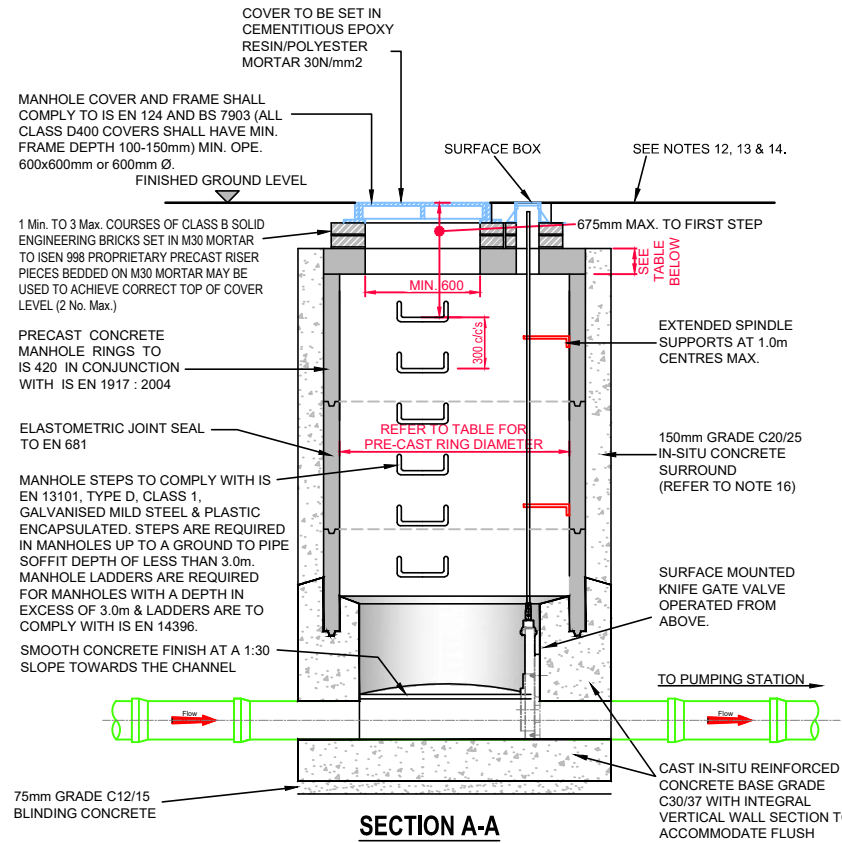
\* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

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

	<p align="center"><b>STANDARD DETAILS - WASTEWATER</b></p>					<p>SCALE NOT TO SCALE</p>	<p>DATE SEPT. 2015</p>	
	<p>TITLE</p> <p align="center"><b>PRE-CAST CONCRETE MANHOLE WITH PRECAST BASE.</b></p>						<p>DRAWING No. STD-WW-10A</p>	<p>REV 0</p>
	<p>0</p>	<p>07/20</p>	<p>RH</p>	<p>TOC</p>	<p>Initial Issue</p>	<p>MOD</p>		
<p>No.</p>	<p>Date</p>	<p>Drn</p>	<p>Chk</p>	<p>Description</p>	<p>App</p>			

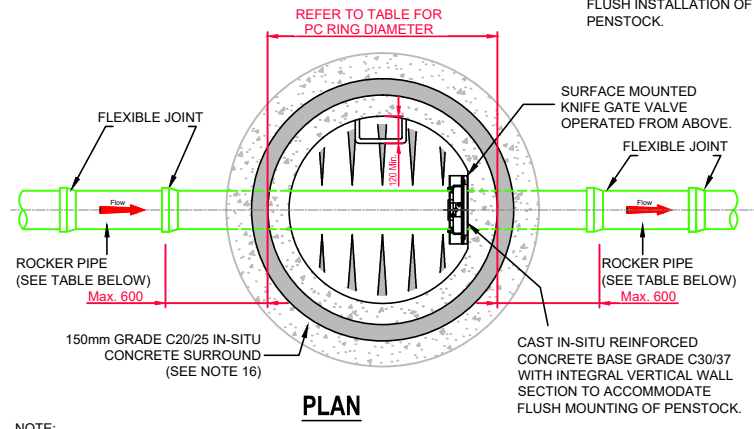


- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- PRE-CAST MANHOLE UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420.
- THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE.
- APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER REVIEW AND COMPLYING WITH IS EN 1917 & IS 420. REFER TO STD-WW-10C
- STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
- MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
- MANHOLE ROOFS SHALL CONSIST OF A RE-INFORCED 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 REVIEW AND COMPLIANCE WITH IS EN 1917.
- COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
- 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 REVIEW BY IRISH WATER.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- 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.
- IF DEPTH FROM GROUND TO PIPE SOFFIT IS GREATER THAN 6m DEEP, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
- PROPRIETARY WATERTIGHT PCC MANHOLE RING SYSTEMS WITH A WALL THICKNESS > 125mm, & A WATER TIGHT JOINT SEALING SYSTEM, MAY BE USED WITHOUT CONCRETE SURROUND, SUBJECT TO THE GROUND WATER LEVEL AT THE MANHOLE BEING LOW, & SUBJECT TO REVIEW BY IRISH WATER.
- THE INTERNAL MANHOLE DIAMETERS SHOWN IN THE TABLE BELOW ARE MINIMUM DIMENSIONS AND WILL INCREASE DEPENDING ON THE NUMBER AND DIAMETER OF ADDITIONAL INLETS AND FINISHED WITH A 1:3 SAND/CEMENT FINISH TO SUIT FLOW OF INLETS AND OUTLET.



**SECTION A-A**

NOTE:  
A PRECAST BASE ALTERNATIVE IS ACCEPTABLE PROVIDED THAT A VERTICAL INTERNAL FACE IS INCORPORATED TO FACILITATE THE FLUSH INSTALLATION OF THE PENSTOCK.



**PLAN**

NOTE:  
IF FLEXIBLE PIPES ARE BEING USED, ROCKER PIPES ARE NOT REQUIRED.

NOTE:  
PRECAST CONCRETE MANHOLES SHALL ONLY BE USED WHERE THE WATER TABLE IS LOW. THEY SHALL NOT BE USED WHERE THERE IS A PERCHED WATER TABLE, WHERE THE SEWER IS LOCATED NEXT TO A RIVER, LAKE OR OTHER WATER BODY AND WITHIN 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.

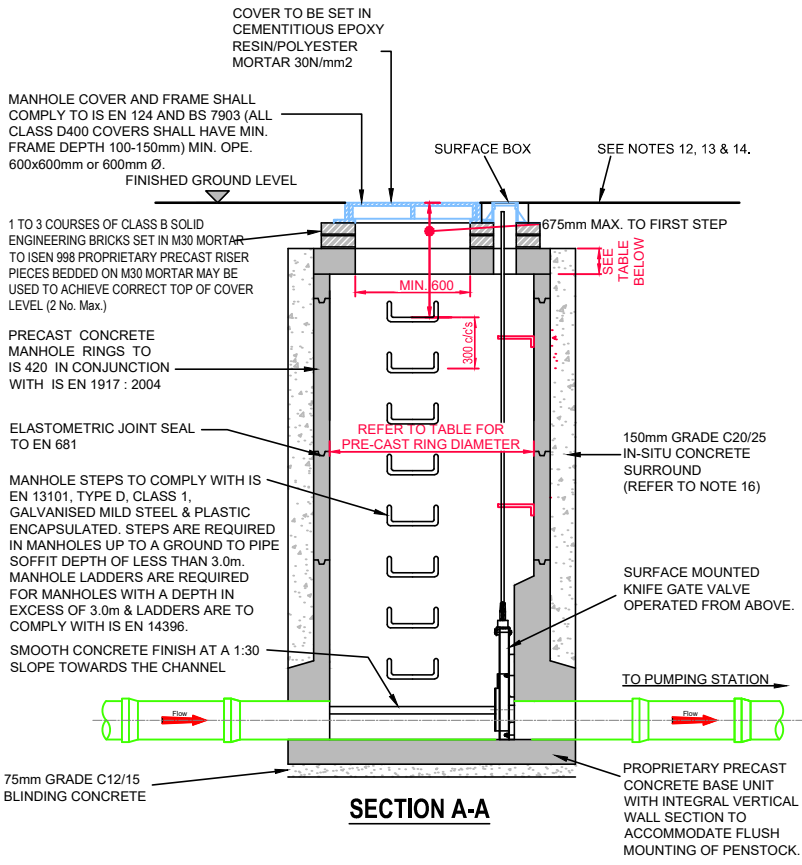
MINIMUM MANHOLE DIAMETERS			
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)	MIN. PRECAST ROOF SLAB EFFECTIVE THICKNESS (mm)	MIN. IN-SITU ROOF SLAB THICKNESS (mm)
UP TO 450	1350	160	225
500 TO 750	1500	170	225

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

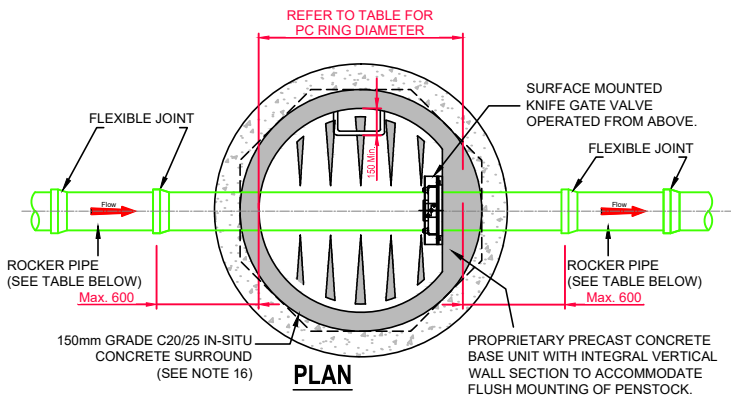
\* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

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

	<p style="text-align: center;"><b>STANDARD DETAILS - WASTEWATER</b></p>				SCALE	DATE
	<p style="text-align: center;">TITLE</p> <p style="text-align: center;"><b>PRE-CAST CONCRETE PUMPING STATION INLET MANHOLE. WITH CAST IN SITU CONCRETE BASE</b></p>				NOT TO SCALE	SEPT. 2015
					DRAWING No.	REV
					<b>STD-WW10B</b>	<b>0</b>
0	07/20	RH	TOC	Initial Issue		
No.	Date	Drn	Chk	Description	App	



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420.
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 REVIEW AND COMPLYING WITH IS EN 1917 & IS 420.
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 REVIEW.
7. MANHOLE ROOFS SHALL CONSIST OF A RE-INFORCED 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 REVIEW AND COMPLIANCE WITH IS EN 1917.
8. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
9. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK 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 FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
12. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
13. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
14. 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.
15. IF DEPTH FROM GROUND TO PIPE SOFFIT IS GREATER THAN 6m DEEP, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
16. PROPRIETARY WATERTIGHT PCC MANHOLE RING SYSTEMS WITH A WALL THICKNESS > 125mm, & A WATER TIGHT JOINT SEALING SYSTEM, MAY BE USED WITHOUT CONCRETE SURROUND, SUBJECT TO THE GROUND WATER LEVEL AT THE MANHOLE BEING LOW, & SUBJECT TO REVIEW BY IRISH WATER.
17. THE INTERNAL MANHOLE DIAMETERS SHOWN IN THE TABLE BELOW ARE MINIMUM DIMENSIONS AND WILL INCREASE DEPENDING ON THE NUMBER AND DIAMETER OF ADDITIONAL INLETS.
18. IN SITUATIONS WHERE P.C.C. MANHOLE BASES HAVE REDUNDANT CHANNELS, THESE SHALL BE PLUGGED AND FILLED BY SCABBLING AND INFILLED WITH GRADE C20/25 CONCRETE TO MATCH EXISTING BASE AND BENCHED TO SUIT FLOW WITHIN THE MANHOLE BASE.



NOTE:  
 PRECAST CONCRETE MANHOLES SHALL ONLY BE USED WHERE THE WATER TABLE IS LOW. THEY SHALL NOT BE USED WHERE THERE IS A PERCHED WATER TABLE, WHERE THE SEWER IS LOCATED NEXT TO A RIVER, LAKE OR OTHER WATER BODY AND WITHIN 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.

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

					STANDARD DETAILS - WASTEWATER		SCALE NOT TO SCALE	DATE SEPT. 2015
	TITLE <b>PRE-CAST CONCRETE PUMPING STATION INLET MANHOLE. WITH PRE-CAST CONCRETE BASE</b>						DRAWING No.	REV
							STD-WW40C	0
	0	07/20	RH	TOC	Initial Issue	MOD		
	No.	Date	Drn	Chk	Description	App		

MANHOLE COVER AND FRAME SHALL COMPLY TO IS EN 124 AND BS 7903 (ALL CLASS D400 COVERS SHALL HAVE MIN. FRAME DEPTH 100-150mm) MIN. OPE. 600x600mm or 600mm Ø.

COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm<sup>2</sup>

SEE NOTES 9, 10 & 11.

FINISHED GROUND LEVEL

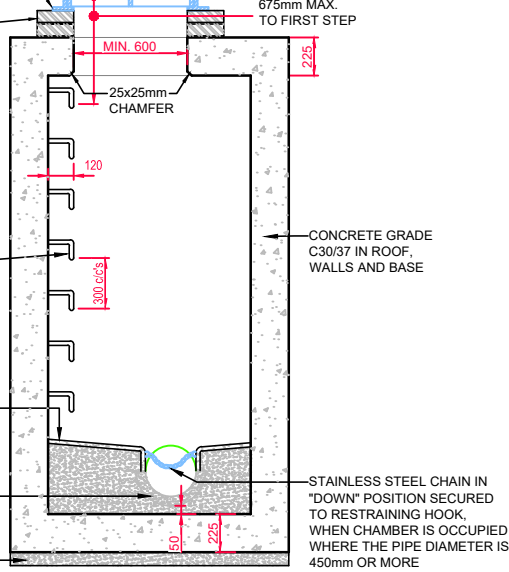
1 TO 3 COURSES OF CLASS B SOLID ENGINEERING BRICKS SET IN M30 MORTAR TO IS EN 998 PROPRIETARY PRECAST RISER PIECES BEDDED ON M30 MORTAR MAY BE USED TO ACHIEVE CORRECT TOP OF COVER LEVEL (2 No. Max.)

MANHOLE STEPS TO COMPLY WITH IS EN 13101, TYPE D, CLASS 1, GALVANISED MILD STEEL & PLASTIC ENCAPSULATED. STEPS ARE REQUIRED IN MANHOLES WITH A GROUND TO PIPE SOFFIT DEPTH OF LESS THAN 3m. MANHOLE LADDERS ARE REQUIRED FOR MANHOLES WITH A DEPTH IN EXCESS OF 3.0m & ARE TO COMPLY WITH IS EN 14396.

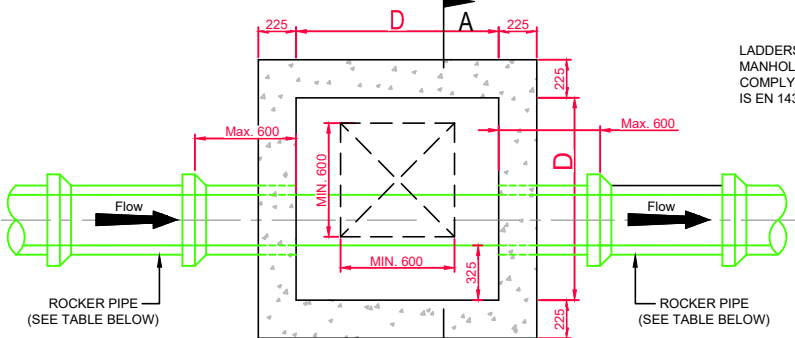
1:3 CEMENT:SAND MORTAR WITH STEEL TROWEL FINISH AT A SLOPE OF 1:30 TOWARDS THE CHANNEL

INVERT SHOULD BE FORMED WITH CAST IN-SITU CONCRETE C25/30 20mm AGGREGATE FINISHED WITH A 1:3 CEMENT SAND MORTAR

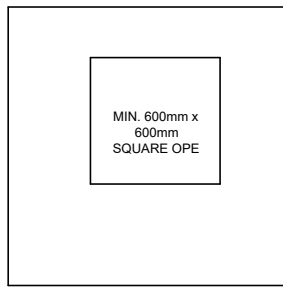
75mm GRADE C12/15 BLINDING CONCRETE



SECTION A-A



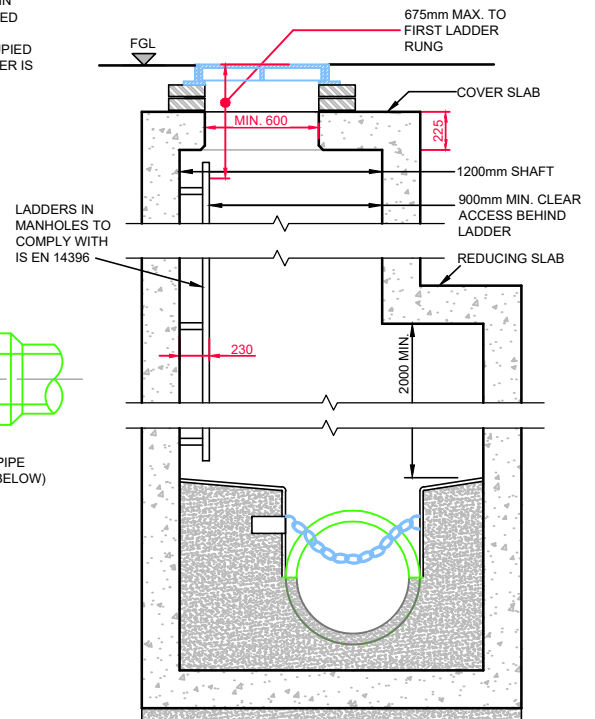
PLAN



ROOF PLAN

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

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- IN-SITU MANHOLES TO HAVE A MINIMUM WALL AND FLOOR THICKNESS OF 225mm FOR MANHOLE DEPTHS UP TO 3.0m AND 300mm OR MORE WHEN THE MANHOLE DEPTH EXCEEDS 3.0m.
- STRUCTURAL DESIGN & REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. MANHOLE ROOFS SHALL CONSIST OF A 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 IS 420.
- MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
- COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
- ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- 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.
- IF DEPTH FROM GROUND TO PIPE SOFFIT EXCEEDS 6m, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
- THE INTERNAL MANHOLE DIMENSIONS SHOWN IN THE TABLE BELOW ARE MINIMUM DIMENSIONS AND WILL INCREASE DEPENDING ON THE NUMBER AND DIAMETER OF ADDITIONAL INLETS, AND FINISHED WITH A 1:3 SAND/CEMENT FINISH TO SUIT FLOW OF INLETS AND OUTLET.



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

(NOTE: ON MANHOLES <1.5m SHAFT DIMENSION, REDUCING SLAB NOT TO BE USED & SHAFT TO CONTINUE UP TO COVER SLAB)

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

\* 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 MANHOLE RESPONSIBILITY & RISK ASSESSMENT



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

STANDARD DETAILS - WASTEWATER	
TITLE	
IN-SITU CONCRETE MANHOLE	

SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
STD-WW-11	3

MANHOLE COVER AND FRAME SHALL COMPLY TO IS EN 124 AND BS 7903 (ALL CLASS D400 COVERS SHALL HAVE MIN. FRAME DEPTH 100-150mm) MIN. OPE. 600x600mm or 600mm Ø.

COVER TO BE SET IN CEMENTITIOUS EPOXY RESIN/POLYESTER MORTAR 30N/mm<sup>2</sup>

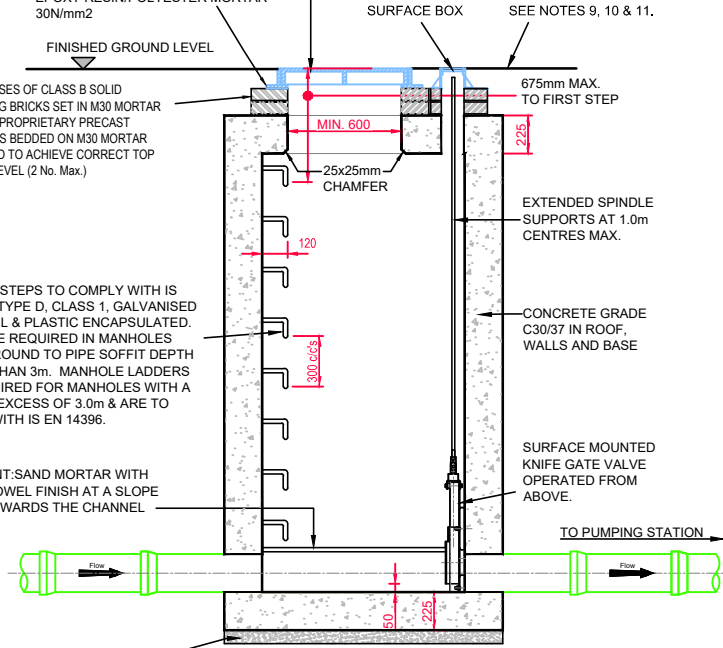
1 TO 3 COURSES OF CLASS B SOLID ENGINEERING BRICKS SET IN M30 MORTAR TO IS EN 998 PROPRIETARY PRECAST RISER PIECES BEDDED ON M30 MORTAR MAY BE USED TO ACHIEVE CORRECT TOP OF COVER LEVEL (2 No. Max.)

MANHOLE STEPS TO COMPLY WITH IS EN 13101, TYPE D, CLASS 1, GALVANISED MILD STEEL & PLASTIC ENCAPSULATED. STEPS ARE REQUIRED IN MANHOLES WITH A GROUND TO PIPE SOFFIT DEPTH OF LESS THAN 3m. MANHOLE LADDERS ARE REQUIRED FOR MANHOLES WITH A DEPTH IN EXCESS OF 3.0m & ARE TO COMPLY WITH IS EN 14396.

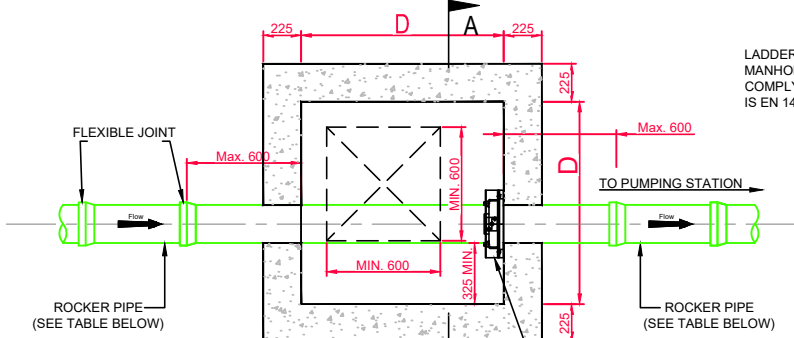
1: 3 CEMENT:SAND MORTAR WITH STEEL TROWEL FINISH AT A SLOPE OF 1:30 TOWARDS THE CHANNEL

75mm GRADE C12/15 BLINDING CONCRETE

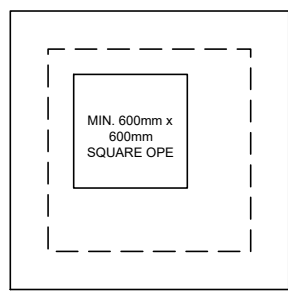
SEE NOTES 9, 10 & 11.



**SECTION A-A**

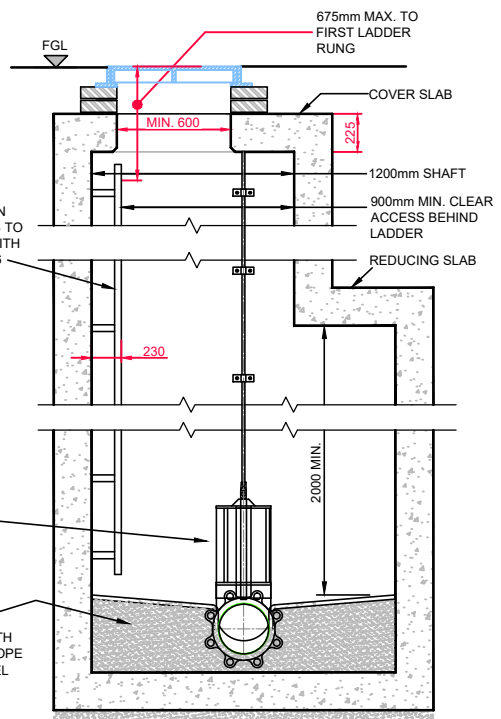


**PLAN**



**ROOF PLAN**

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- IN-SITU MANHOLES TO HAVE A MINIMUM WALL AND FLOOR THICKNESS OF 225mm FOR MANHOLE DEPTHS UP TO 3.0m AND 300mm OR MORE WHEN THE MANHOLE DEPTH EXCEEDS 3.0m.
- STRUCTURAL DESIGN & REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. MANHOLE ROOFS SHALL CONSIST OF A 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 IS 420.
- MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER REVIEW.
- COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
- ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- 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.
- IF DEPTH FROM GROUND TO PIPE SOFFIT EXCEEDS 6m, A SITE SPECIFIC ENGINEERED SOLUTION FOR ACCESS SHALL BE PROVIDED.
- THE INTERNAL MANHOLE DIMENSIONS SHOWN IN THE TABLE BELOW ARE MINIMUM DIMENSIONS AND WILL INCREASE DEPENDING ON THE NUMBER AND DIAMETER OF ADDITIONAL INLETS.



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

(NOTE: ON MANHOLES <1.5m SHAFT DIMENSION, REDUCING SLAB NOT TO BE USED & SHAFT TO CONTINUE UP TO COVER SLAB)

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

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

\* 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

	<p style="text-align: center;"><b>STANDARD DETAILS - WASTEWATER</b></p>					SCALE	DATE					
	TITLE					NOT TO SCALE	APR. 2020					
	<p style="text-align: center;"><b>CAST IN-SITU CONCRETE PUMPING STATION INLET MANHOLE.</b></p>					DRAWING No.	REV					
					0	07/20	RH	TOC	Initial Issue	MOD		
					No.	Date	Drn	Chk	Description	App		
					STD-WW-11A		0					



HEAVY DUTY COVER AND FRAME  
D400 (TO SUIT 150mm OPE.)  
TO IS 261 & B.S. 5834

150mm CONCRETE  
SURROUND  
150mm DIA. PVC PIPE

150mm 90° PVC MULTI SADDLE  
FITTED TO TOP OF Y-JUNCTION  
(IN ACCORDANCE WITH  
MANUFACTURER'S  
INSTRUCTIONS) USING A  
SUITABLE ADHESIVE TO ENSURE  
A WATER TIGHT SEAL.

Y - JUNCTION

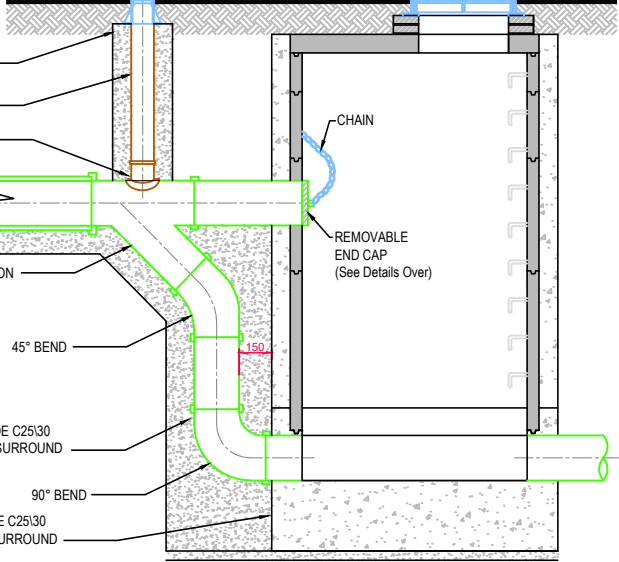
45° BEND

150mm GRADE C25/30  
CONCRETE SURROUND

90° BEND

225mm GRADE C25/30  
CONCRETE SURROUND

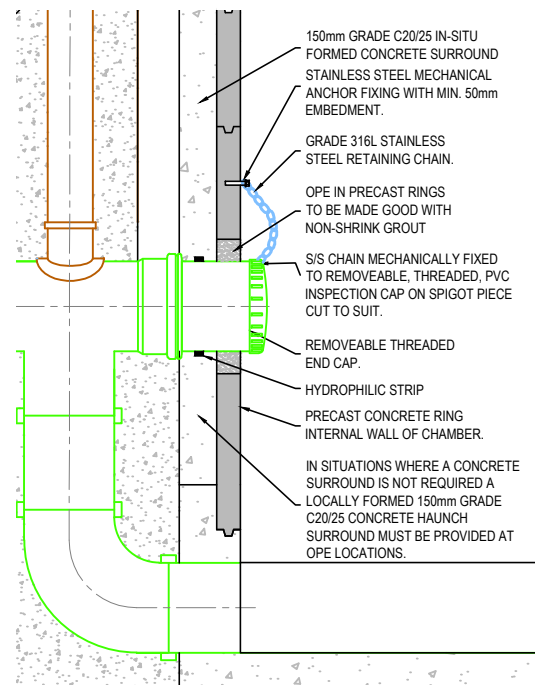
GROUND LEVEL



**TYPE No. 1**

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 1700mm & LESS THAN 2300mm  
500mm - 900mm DIA. (INCL.) DROP GREATER THAN 2300mm & LESS THAN 3000mm

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. RODDING EYE VERTICAL PIPE SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 AND BS 5834. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
4. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
5. MANHOLE DETAILS TO BE IN ACCORDANCE WITH STD-WW-09, 10, 10A AND 11
6. ALL BACKDROPS SHOULD TERMINATE AT THEIR LOWER END WITH A BEND INTO THE MAIN CHANNEL TO ENSURE THE DISCHARGE IS 45° OR LESS ON PLAN.
7. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.



**Rodding Eye End Cap Detail**

NOTE:  
PRECAST CONCRETE MANHOLES SHALL ONLY BE USED WHERE THE WATER TABLE IS LOW. THEY SHALL NOT BE USED WHERE THERE IS A PERCHED WATER TABLE, WHERE THE SEWER IS LOCATED NEXT TO A RIVER, LAKE OR OTHER WATER BODY AND WITHIN 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.

HEAVY DUTY COVER AND FRAME  
D400 (TO SUIT 150mm OPE.)

150mm CONCRETE  
SURROUND  
150mm DIA. PVC PIPE

150mm 90° PVC MULTI SADDLE FITTED TO  
TOP OF T-JUNCTION (IN ACCORDANCE  
WITH MANUFACTURER'S INSTRUCTIONS)  
USING A SUITABLE ADHESIVE TO ENSURE  
A WATER TIGHT SEAL.

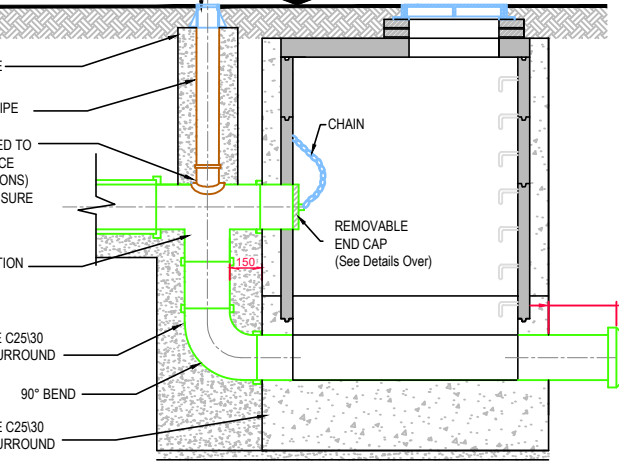
TEE JUNCTION

90° BEND

150mm GRADE C25/30  
CONCRETE SURROUND

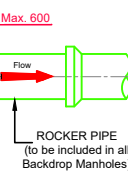
225mm GRADE C25/30  
CONCRETE SURROUND

GROUND LEVEL



**TYPE No. 2**

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 900 AND LESS THAN 1700mm  
\*500mm - 900mm DIA. (INCL.) DROP GREATER THAN 1300mm AND LESS THAN 2300mm  
(SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS.)



ROCKER PIPE  
(to be included in all  
Backdrop Manholes)

GROUND LEVEL

Y - JUNCTION

CHAIN

REMOVABLE  
END CAP  
(See Detail Above)

150mm GRADE C25/30  
CONCRETE SURROUND

45° BEND

225mm GRADE C25/30  
CONCRETE SURROUND

**TYPE No. 3**

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 900m  
\*500mm - 900mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 1300mm  
(SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS.)

GROUND LEVEL

1:3 CEMENT-SAND MORTAR WITH  
STEEL TROWEL FINISH AT A 1:30  
SLOPE TOWARDS THE CHANNEL

200mm WIDE x 150mm HIGH x 150mm DEEP  
SELF CLEANING STAGGERED TOE HOLE REBATES  
AT 300mm CENTRES TO BE PROVIDED WHERE  
CHANNEL EXCEEDS 600mm WIDE

150mm GRADE C25/30  
CONCRETE SURROUND

BENCHING CONC. GRADE C25/30  
WITH A 1:3 SAND:CEMENT FINISH

**TYPE No. 4 CASCADE MANHOLE**

150mm - 450mm DIA. (INCL.) DROP LESS THAN 600mm  
\*500mm - 900mm DIA. (INCL.) DROP LESS THAN 600mm  
(SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS.)

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

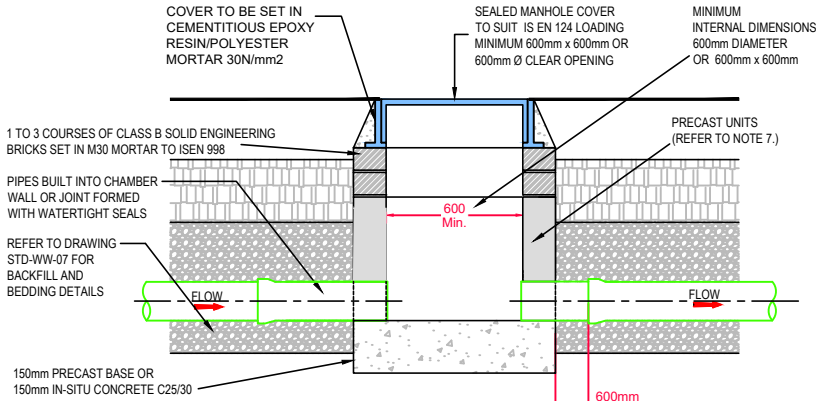


No.	Date	Drn	Chk	Description	App
3	07/20	RH	TOC	Cascade manhole Type 4 added, end cap detail added, notes updated, title updated	MOD
2	11/17	JMC	TOC	Updated notes	MOD
1	08/16	JMC	TOC	Added steps	MOD
0	09/15	JMC	TOC	Initial Issue	SL

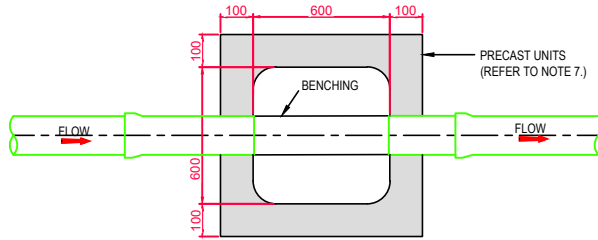
STANDARD DETAILS - WASTEWATER	
TITLE	SCALE
BACKDROP AND CASCADE MANHOLES	NOT TO SCALE

DATE	REV
SEPT. 2015	3

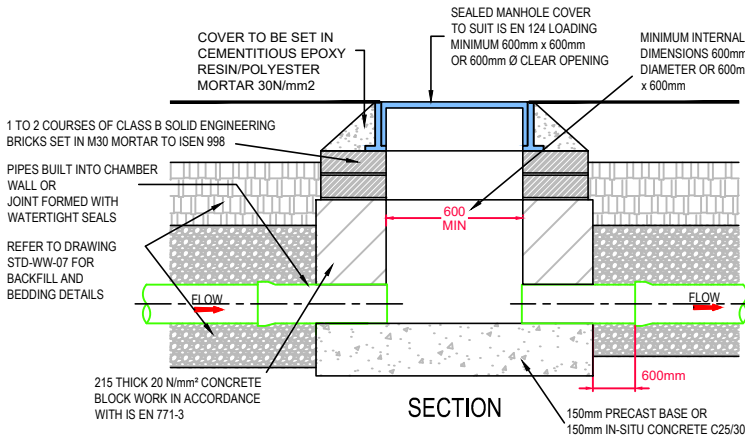
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AN INSPECTION CHAMBER SHOULD BE LOCATED AT OR WITHIN 1m OF THE PROPERTY BOUNDARY AT THE UPSTREAM END OF EACH SERVICE CONNECTION ON THE PRIVATE SIDE OF THE CURTLAGE, IF PRACTICABLE, CONSULT WITH IRISH WATER ON ALTERNATIVE LOCATIONS.
3. SERVICE CONNECTION FROM PUBLIC SEWER TO PROPERTY BOUNDARY IS A PUBLIC ASSET. PIPE UPSTREAM OF THE PROPERTY BOUNDARY IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING.
4. ACCESS POINTS SHOULD BE LOCATED SO THAT THEY ARE ACCESSIBLE AND APPARENT TO THE MAINTAINER AT ALL TIMES FOR USE. THEY SHOULD AVOID REAR GARDENS OR ENCLOSED LOCATIONS AND SHOULD NEVER BE OVERLAIN WITH SURFACE DRESSING, TOPSOIL, ETC.
5. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
6. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
7. PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER - SEE DETAIL BELOW.
8. CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 804 OR CLAUSE 808 MATERIAL AS PER STD-WW-07.
9. MAXIMUM DEPTH FROM COVER LEVEL TO INVERT OF PIPE = 1.2m. INTERNAL DIMENSIONS GREATER THAN 600 x 600mm OR 600mm Ø REQUIRED WHERE DEPTH EXCEEDS 1.2m - CONSULT WITH IRISH WATER.
10. SMALLER INSPECTION CHAMBERS WITH INTERNAL DIMENSIONS OF 450mm Ø OR 450 X 450mm MAY BE PERMITTED SUBJECT TO APPROVAL BY IRISH WATER WHERE CONFINED PHYSICAL CONDITIONS EXIST.
11. PREFABRICATED UNITS SHOULD HAVE WATER TIGHT JOINTS AND SHOULD BE INTERLOCKING TO PREVENT LATERAL MOVEMENT OF INDIVIDUAL SECTIONS OF THE UNIT



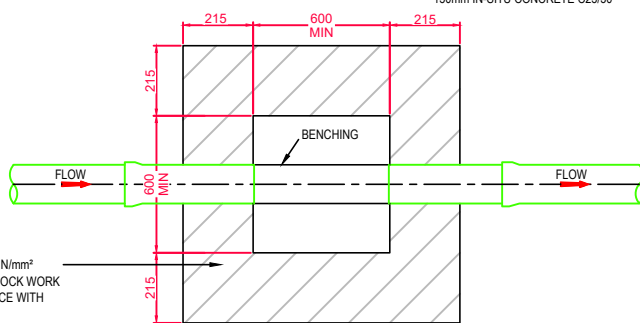
SECTION



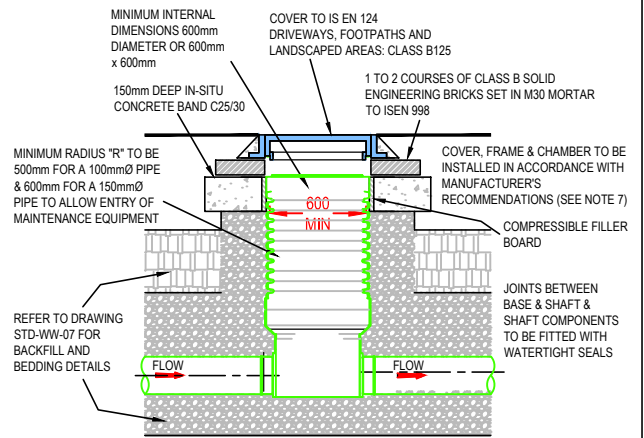
FLOOR PLAN  
**INSPECTION CHAMBER  
(PRECAST CONCRETE CONSTRUCTION)**



SECTION



FLOOR PLAN  
**INSPECTION CHAMBER  
(BLOCK WORK CONSTRUCTION)**



SECTION

PROPRIETARY INSPECTION CHAMBERS TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

**PROPRIETARY INSPECTION CHAMBER to EN13598-2  
(FLEXIBLE MATERIAL, SUBJECT TO PRIOR IRISH  
WATER APPROVAL)**

(MAXIMUM DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE: 1.2m)

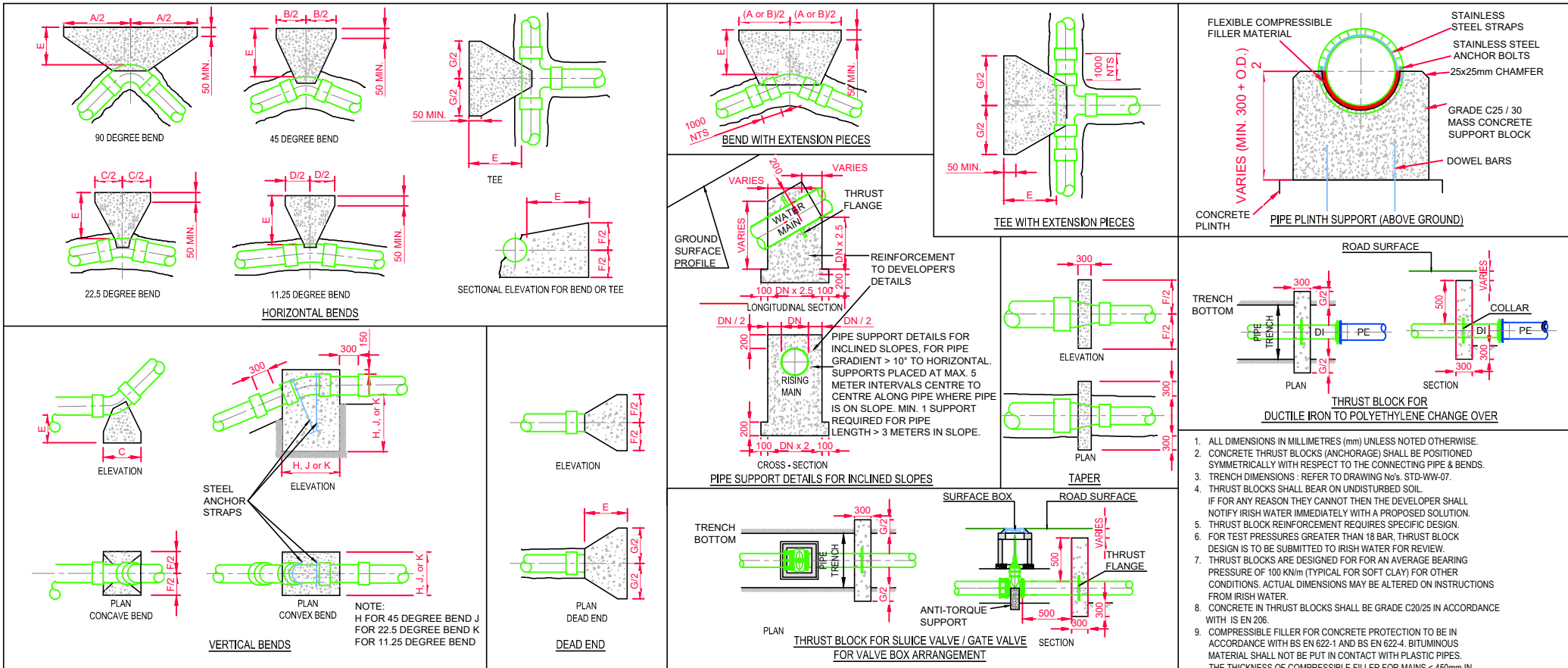
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT



No.	Date	Drn	Chk	Description	App
3	07/20	RH	TOC	Added Flexible Material I.C Detail, Updated Notes	MOD
2	11/17	JMC	TOC	Updated notes	MOD
1	08/16	JMC	TOC	Added Cl. 808 to note 8	MOD
0	09/15	JMC	TOC	Initial Issue	SL

STANDARD DETAILS - WASTEWATER	
TITLE	SCALE
PRIVATE SIDE INSPECTION CHAMBER	NOT TO SCALE

DATE	REV
SEPT. 2015	3



- ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- CONCRETE THRUST BLOCKS (ANCHORAGE) SHALL BE POSITIONED SYMMETRICALLY WITH RESPECT TO THE CONNECTING PIPE & BENDS.
- TRENCH DIMENSIONS : REFER TO DRAWING Nos. STD-WW-07.
- 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.
- THRUST BLOCK REINFORCEMENT REQUIRES SPECIFIC DESIGN.
- FOR TEST PRESSURES GREATER THAN 18 BAR, THRUST BLOCK DESIGN IS TO BE SUBMITTED TO IRISH WATER FOR REVIEW.
- THRUST BLOCKS ARE DESIGNED 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.
- 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.
- CONCRETE THRUST BLOCKS FOR POLYETHYLENE PIPE TO COMPLY WITH THE MANUFACTURER'S REQUIREMENTS.
- POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.

< 12 BAR TEST PRESSURE

NOM. DIA. (mm)	DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K
100	600	330	160	80	200	350	390	700	600	400
150	950	510	280	130	225	450	660	900	750	600
200	1150	600	310	160	300	650	790	1050	900	700
250	1350	750	380	200	300	800	970	1200	1000	750
300	1580	850	450	220	320	950	1110	1300	1100	850
350	2100	1150	570	290	450	1000	1450	1550	1200	900
400	2550	1400	700	350	500	1050	1800	1700	1250	1000
450	3000	1630	830	420	680	1100	2130	1800	1450	1150
500	3590	1950	990	500	800	1200	2540	1950	1600	1250
600	4100	2200	1120	570	850	1400	2890	2100	1700	1300

12 BAR TO 15 BAR TEST PRESSURE

NOM. DIA. (mm)	DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K
100	700	380	190	100	200	350	510	750	600	400
150	1135	620	320	160	225	450	660	950	750	600
200	1400	750	380	190	300	650	980	1150	950	700
250	1730	940	480	240	320	800	1210	1350	1050	850
300	2090	1130	580	300	380	950	1480	1500	1200	950
350	2600	1410	720	360	500	1050	1840	1700	1350	1050
400	2980	1610	820	420	750	1200	2110	1850	1500	1150
450	3400	1840	940	470	900	1300	2330	2000	1600	1250
500	4090	2210	1130	570	1000	1400	2890	2200	1750	1350
600	5010*	2710*	1380	700	1000	1500	3550*	2350	1900	1500

15 BAR TO 18 BAR TEST PRESSURE

NOM. DIA. (mm)	DIMENSIONS									
	A	B	C	D	E	F	G	H	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

**TABLE OF DIMENSIONS FOR STEEPLY INCLINED PIPELINES**

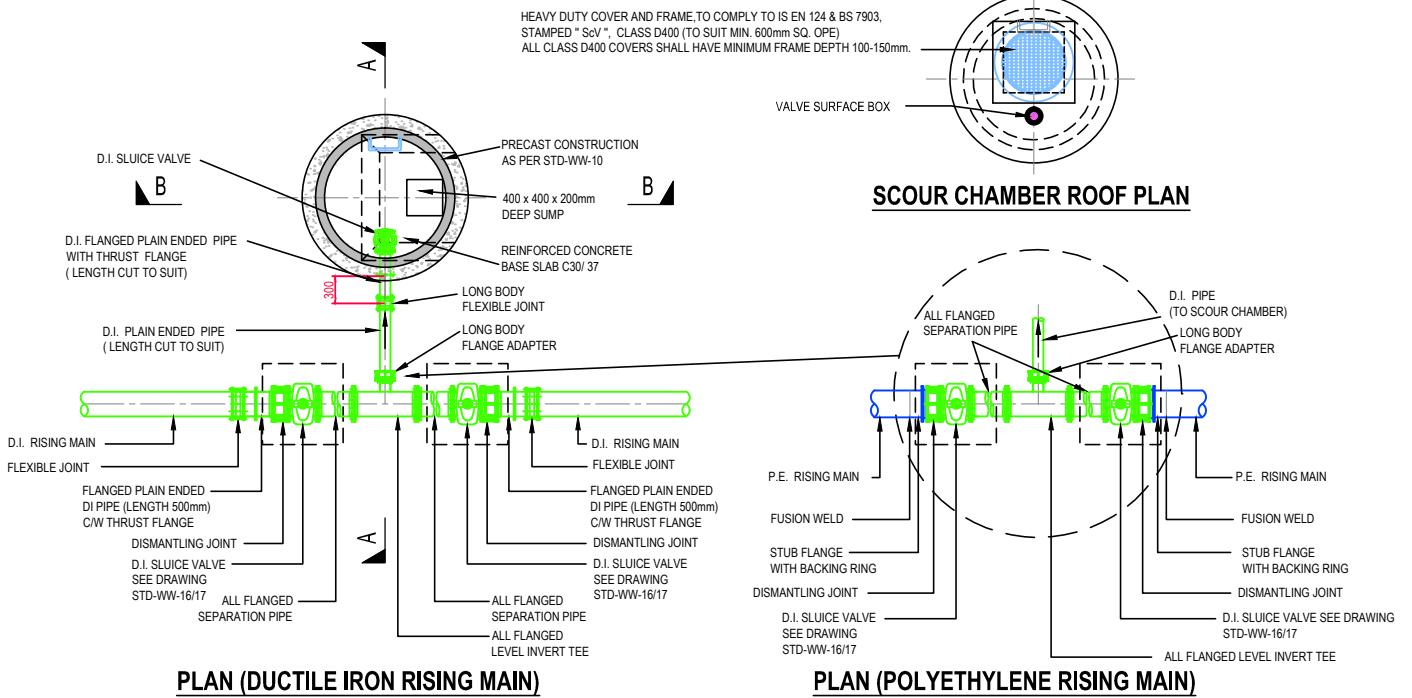
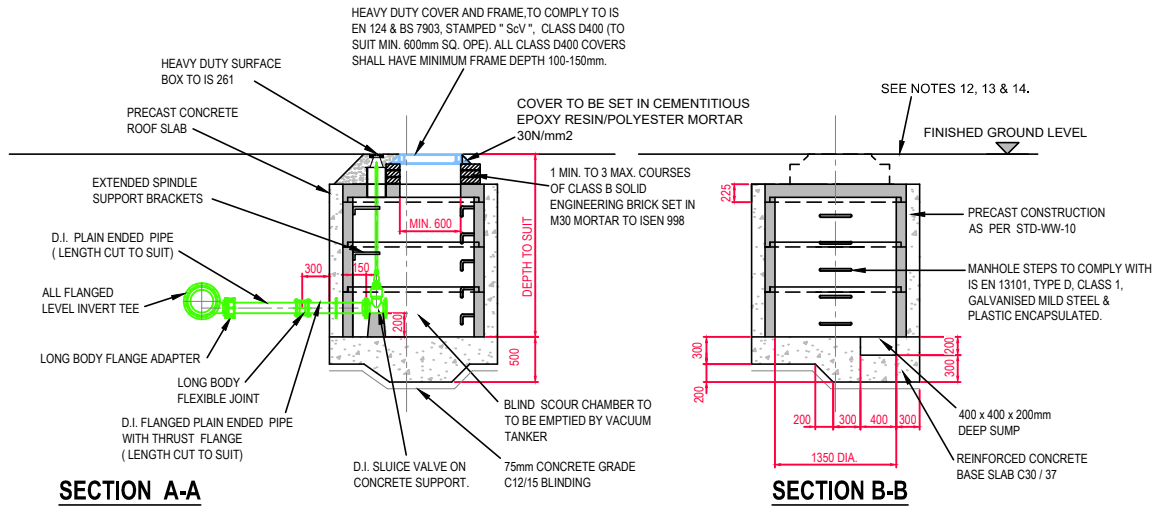
GRADIENT	SPACING
1 IN 2 & STEEPER	5.5m
BELOW 1 IN 2 TO 1 IN 4	11.0m
1 IN 4 TO 1 IN 5	16.6m
1 IN 5 TO 1 IN 6	22.0m

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

						<b>STANDARD DETAILS - WASTEWATER</b>		SCALE NOT TO SCALE	DATE SEPT. 2015	
						TITLE	<b>THRUST BLOCKS FOR RISING MAINS</b>		DRAWING No.	REV
	2	07/20	RH	TOC	Notes Updated	MOD			<b>STD-WW- 14</b>	<b>2</b>
	1	11/17	JMC	TOC	Anti-torque support note & thrust flange added & note 6 updated	MOD				
0	09/15	JMC	TOC	Initial Issue	SL					
No.	Date	Drn	Chk	Description	App					



- ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- VALVE SURFACE BOX TO BE IN ACCORDANCE WITH IS 261 OR BS 5834. SCOUR CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- SLUICE VALVES SHALL BE DOUBLE FLANGED WITH DUCTILE IRON RESILIENT SEAL GATE VALVES, SUITABLE FOR USE IN RISING MAINS. THEY SHALL COMPLY WITH THE REQUIREMENTS OF IS EN 1074 AND THEY SHALL HAVE THE APPROPRIATE CE MARKING.
- SCOUR CHAMBER TO BE IN ACCORDANCE WITH BS EN 1992-3.
- STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911 Part 4.
- THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
- ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
- ALL DUCTILE IRON PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
- ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- 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.
- SCOUR VALVE REQUIRED ONLY AT LOW POINTS FOR UNDULATING RISING MAINS.



DIAMETER OF RISING MAIN (mm)	DIAMETER OF SCOUR (mm)
80	80
100 to 200	100

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



No.	Date	Drn	Chk	Description	App
3	07/20	RH	TOC	Manhole cover and brick coursing notes revised & added notes	MOD
2	11/17	JMC	TOC	Revised & added notes	MOD
1	08/16	JMC	TOC	Added steps, revised note 2, dims, cover & ope notes.	MOD
0	09/15	JMC	TOC	Initial Issue	SL

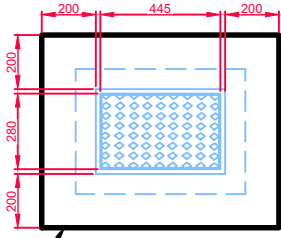
**STANDARD DETAILS - WASTEWATER**

TITLE

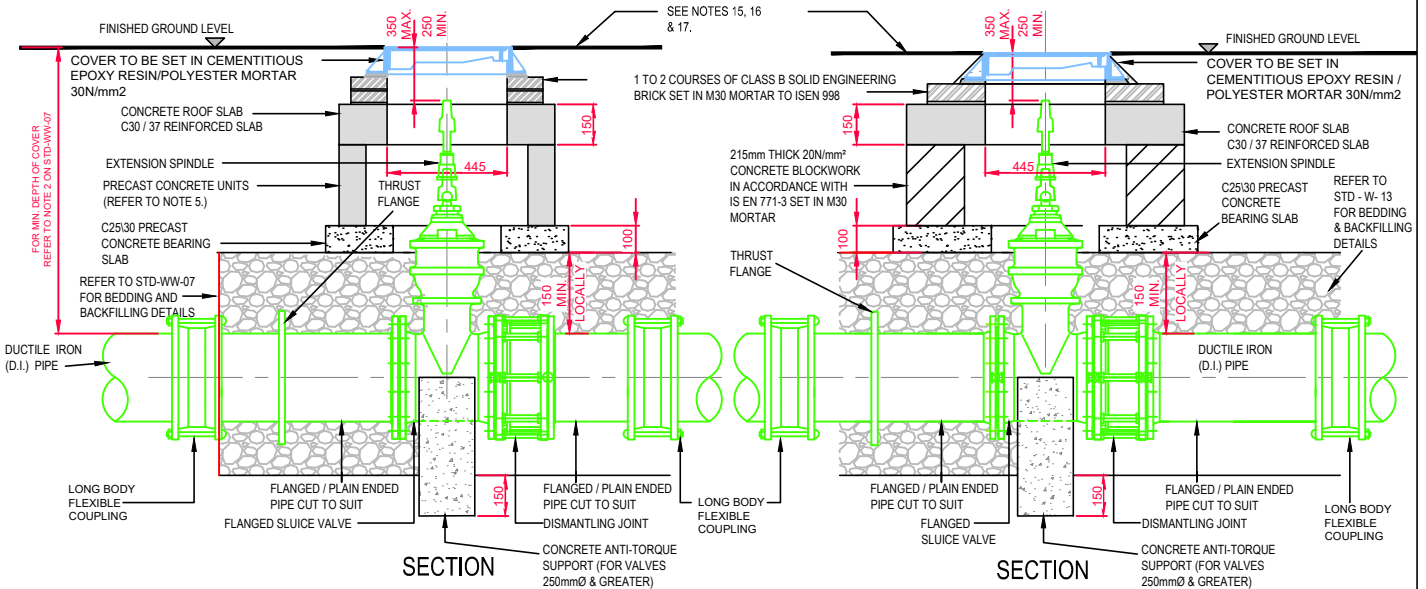
**SCOUR VALVE CHAMBER  
FOUL RISING MAIN (≤ 200mm DIA.)**

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. <b>STD-WW-15</b>	REV <b>3</b>

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SLUIZE VALVE CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 AND BS 5834. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. SLUIZE VALVES SHALL BE DOUBLE FLANGED WITH DUCTILE IRON RESILIENT SEAL GATE VALVES, SUITABLE FOR USE IN RISING MAINS. THEY SHALL COMPLY WITH THE REQUIREMENTS OF IS EN 1074 AND THEY SHALL HAVE THE APPROPRIATE CE MARKINGS.
4. ALL SLUIZE VALVES SHALL BE CLOCKWISE CLOSING.
5. VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911, Part 4.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-WW-07.
7. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
8. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
9. PE PIPES TO BE IN ACCORDANCE WITH IS EN 12201 : 2011.
10. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GRASS AREAS.
11. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
12. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
13. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATAION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
14. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-WW-14. THRUST BLOCKS NOT SHOWN FOR CLARITY.
15. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
16. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
17. 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.

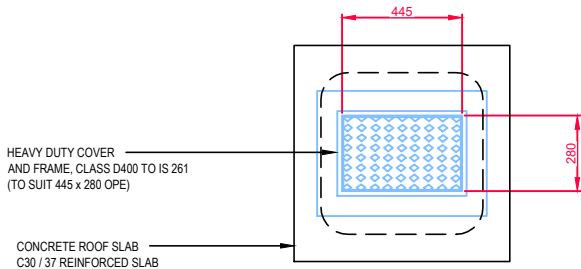


**PLINTH DETAIL  
IN GRASS AREAS**

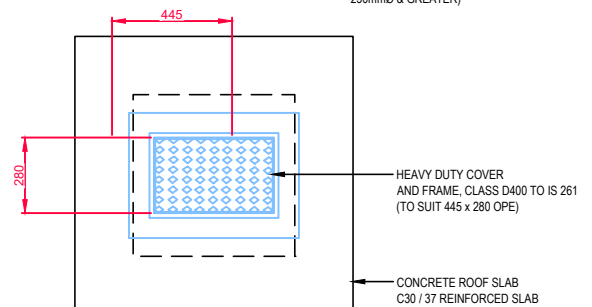


**SECTION**

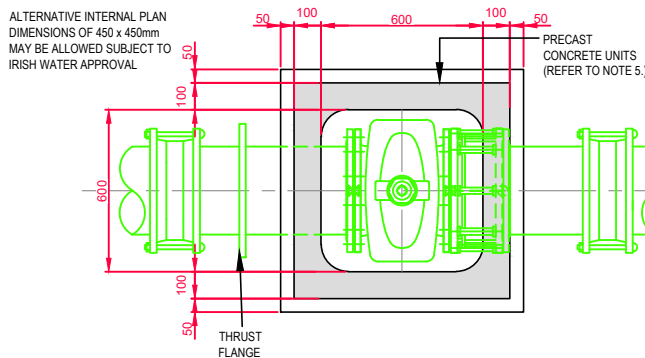
**SECTION**



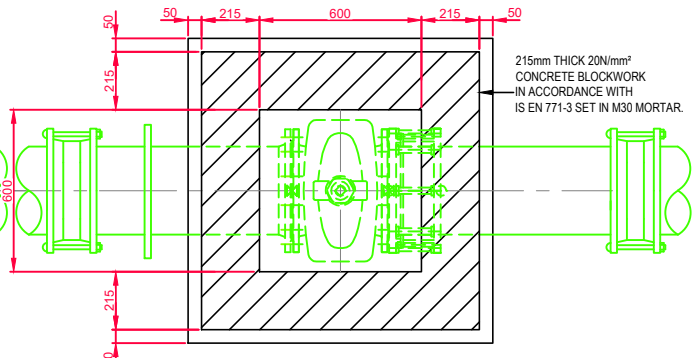
**ROOF PLAN**



**ROOF PLAN**



**FLOOR PLAN**



**FLOOR PLAN**

**SLUIZE VALVE CHAMBER  
(PRECAST CONCRETE CONSTRUCTION)**

**SLUIZE VALVE CHAMBER  
(BLOCKWORK CONSTRUCTION)**

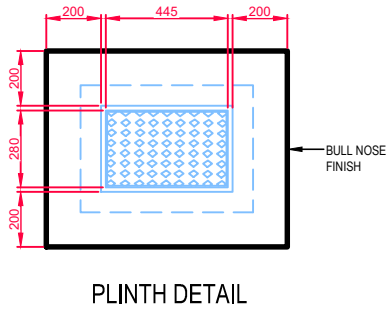
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT



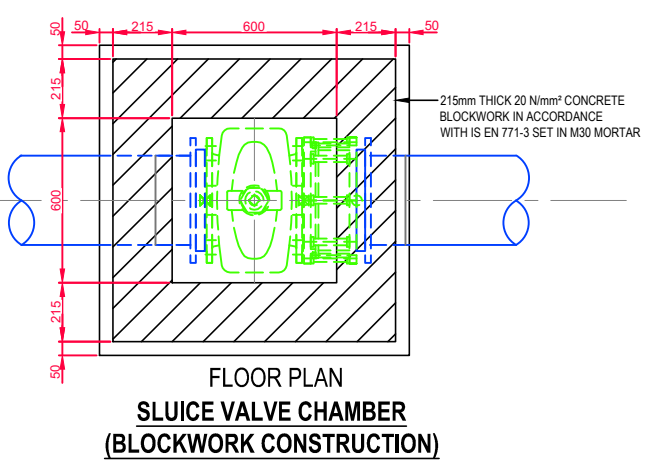
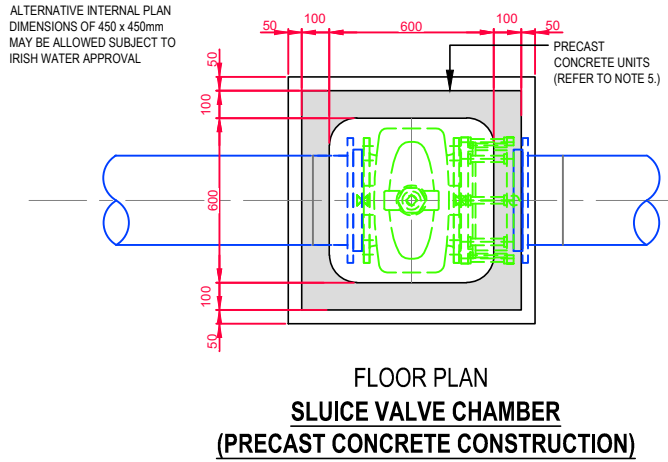
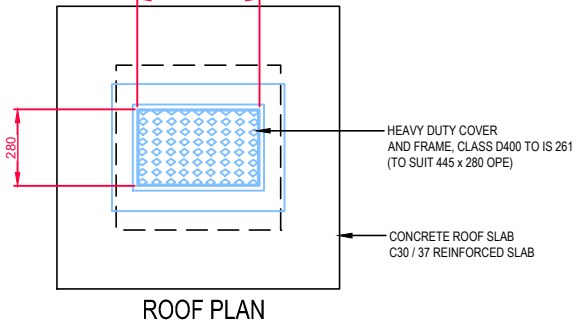
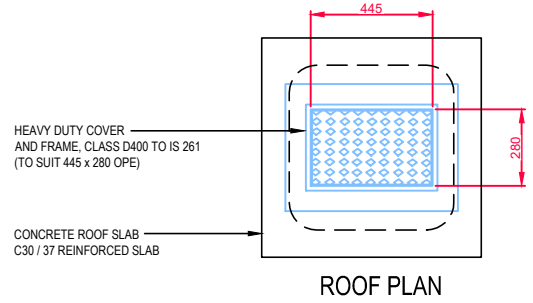
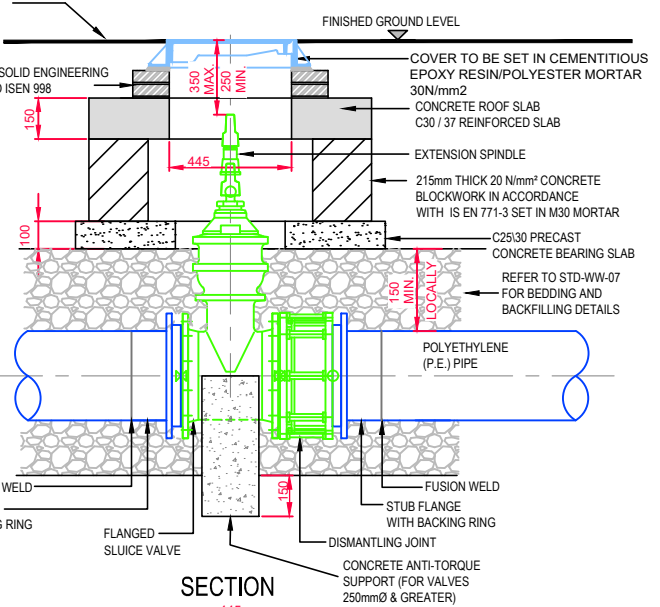
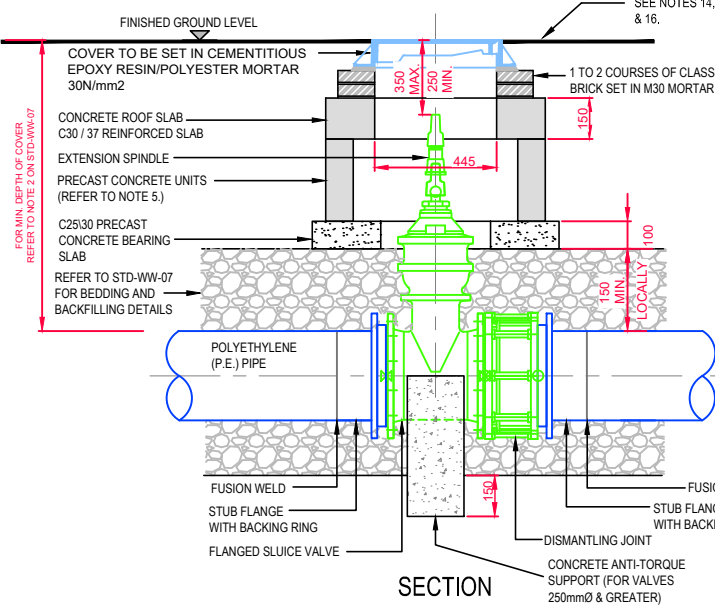
No.	Date	Drn	Chk	Description	App
4	07/20	RH	TOC	Updated anti-torque support note, brickwork bedding mortar spec added, relocated thrust flange.	MOD
3	11/17	JMC	TOC	Revised & Added Notes	MOD
2	08/16	JMC	TOC	Revised note 6 (Cl. 808)	MOD
1	04/16	JMC	TOC	Flexible couplings shown	MOD
0	09/15	JMC	TOC	Initial Issue	SL

STANDARD DETAILS - WASTEWATER	
TITLE	SCALE
SLUIZE VALVE DETAILS FOR RISING MAINS DUCTILE IRON (D.I.) PIPE (≤ 200mm DIA.) (Sheet 1 of 2)	NOT TO SCALE
	DATE SEPT. 2015
	REV
	4

DRAWING No.	REV
STD-WW-16	4



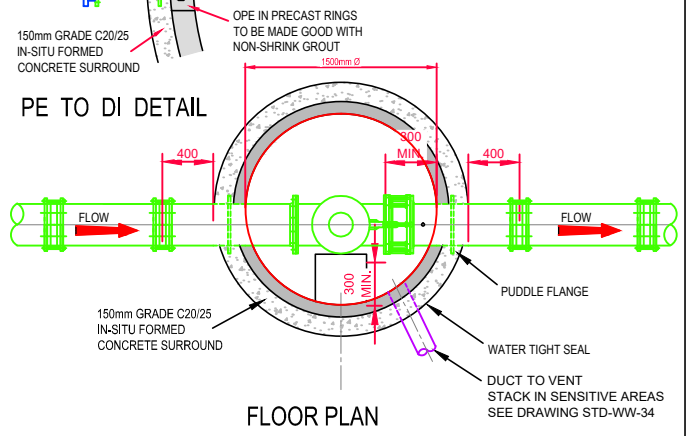
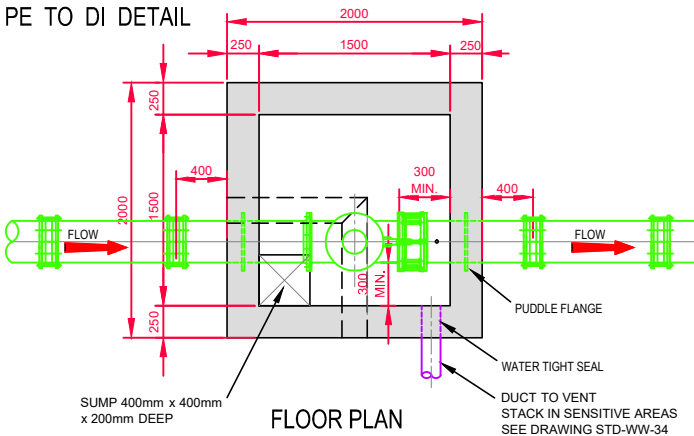
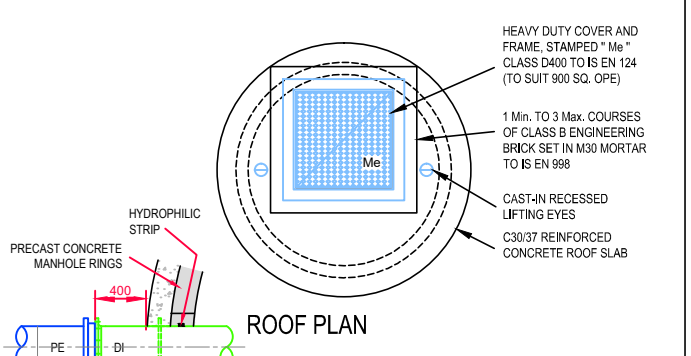
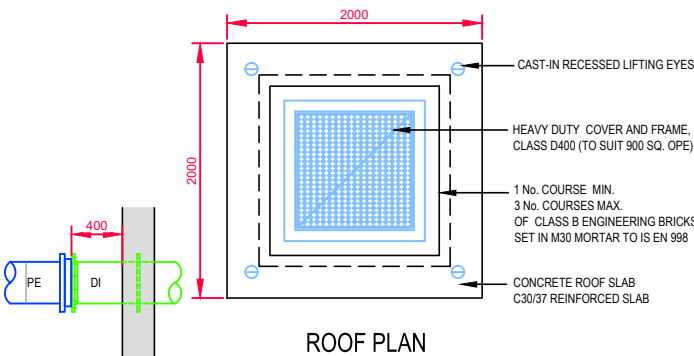
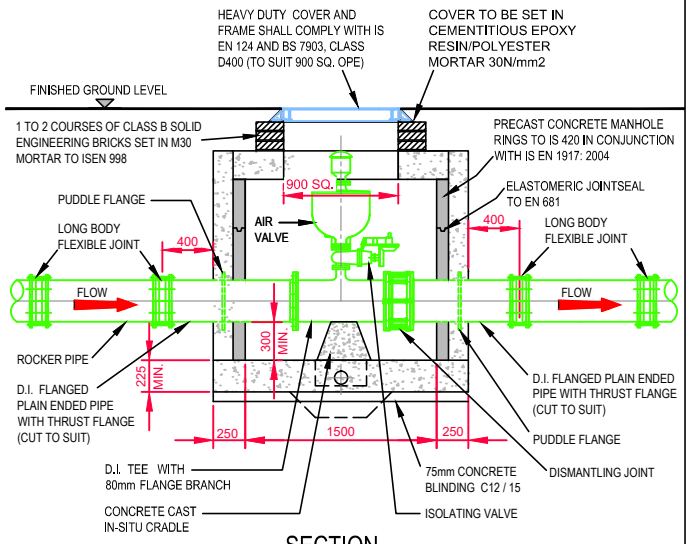
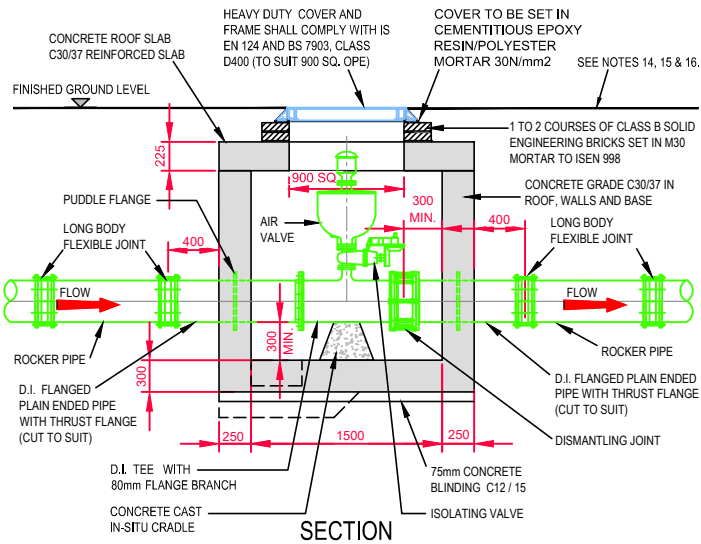
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SLUICE VALVE CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 AND BS 5834. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO REVIEW BY IRISH WATER.
3. SLUICE VALVES SHALL BE DOUBLE FLANGED WITH DUCTILE IRON RESILIENT SEAL GATE VALVES, SUITABLE FOR USE IN RISING MAINS. THEY SHALL COMPLY WITH THE REQUIREMENTS OF IS EN 1074 AND THEY SHALL HAVE THE APPROPRIATE CE MARKINGS.
4. ALL SLUICE VALVES SHALL BE CLOCKWISE CLOSING.
5. VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO REVIEW BY IRISH WATER. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 150mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH BS 5911, Part 4.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-WW-07.
7. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
8. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
9. PE PIPES TO BE IN ACCORDANCE WITH IS EN 12201 - 2011.
10. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
11. THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
12. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
13. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
14. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
15. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
16. 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.



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

					<b>STANDARD DETAILS - WASTEWATER</b>		SCALE	DATE		
					TITLE		NOT TO SCALE	SEPT. 2015		
							<b>SLUICE VALVE DETAILS FOR RISING MAINS POLYETHYLENE (P.E.) PIPE (≤ 200mm DIA.) (Sheet 2 of 2)</b>		DRAWING No.	REV
					<b>STD-WW-17</b>					<b>3</b>
	No.	Date	Drn	Chk					Description	App
3	07/20	RH	TOC	Updated anti-torque support note, brickwork bedding mortar spec and added plan dimensions note	MOD					
2	11/17	JM	TOC	Revised & Added Notes	MOD					
1	08/16	JM	TOC	Revised note 6 (Cl. 808)	MOD					
0	09/15	JM	TOC	Initial Issue	SL					

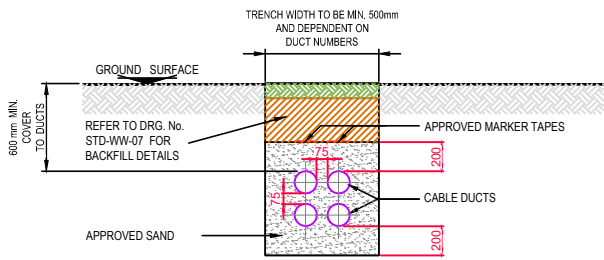
- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- VENTILATION STACK TO BE PROVIDED IN ODOUR SENSITIVE AREAS AND ODOUR TREATMENT UNIT MAY BE REQUIRED DEPENDING ON LOCATION.
- ISOLATING VALVE TO BE IN ACCORDANCE WITH IS EN 1074-2.
- STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH IS 420 & IS EN 1917.
- DOUBLE AIR VALVE CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY VENTILATED METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND TO BE PROVIDED COMPLETE WITH MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.
- THRUST BLOCKS (NOT SHOWN ON DRAWING), TO BE PROVIDED AS PER STANDARD DRAWING STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
- PRE-CAST UNITS MAY BE USED SUBJECT TO REVIEW BY IRISH WATER.
- ANTI CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
- ALL DUCTILE IRON PIPE WORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
- ALL PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
- 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 REVIEW BY IRISH WATER.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
- 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.



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

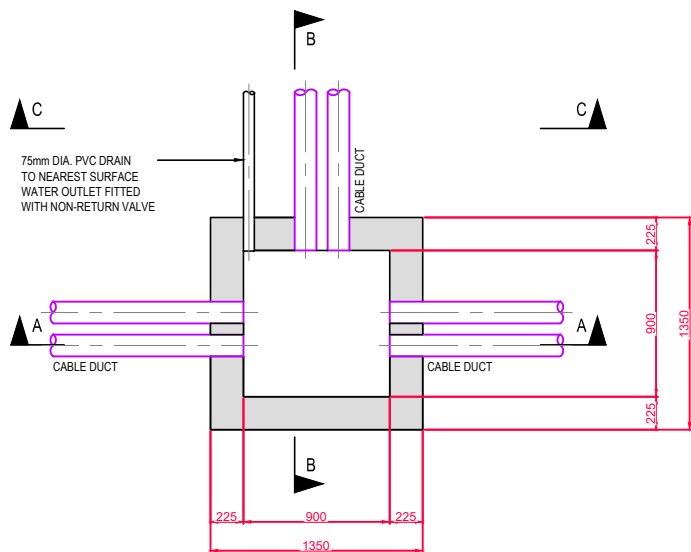
Uisce Éireann : IRISH WATER						STANDARD DETAILS - WASTEWATER		SCALE	DATE
3	07/20	RH	TOC	Updated notes, revised brickwork mortar bedding notes, precast option added.	MOD	TITLE	NOT TO SCALE	SEPT. 2015	
2	11/17	JM	TOC	Revised & added notes	MOD	AIR VALVE CHAMBER (FOUL RISING MAIN ≤ 200mm DIA.)	DRAWING No.	REV	
1	08/16	JM	TOC	Revised note 5 & cover notes	MOD				
0	09/15	JM	TOC	Initial Issue	SL				
No.	Date	Drn	Chk	Description	App				

STD-WW-18 3

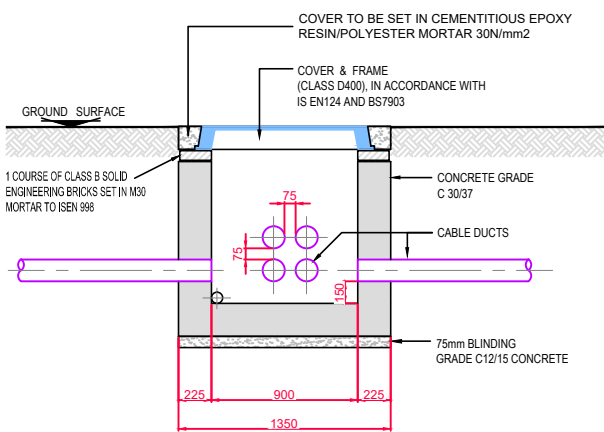


SECTION C - C

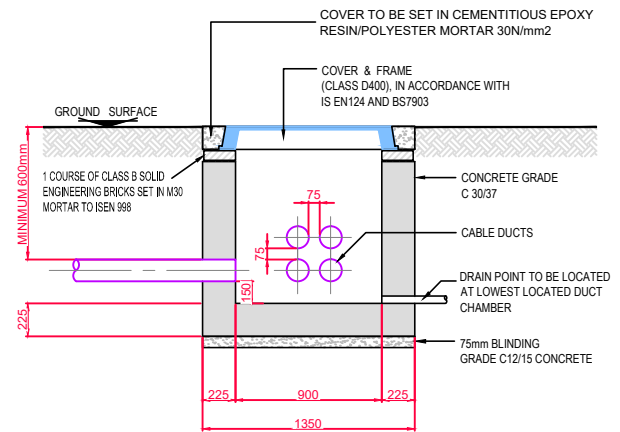
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
3. DUCT ARRANGEMENT MAY VARY DEPENDING ON REQUIREMENTS.
4. CABLE DUCTS TO BE IN ACCORDANCE WITH IS EN 61386-24. DUCTS FOR ESB USE TO BE IN ACCORDANCE WITH ESB SPECIFICATION ESBN 16113 AND IS 370 COLOUR CODE.
5. PROPRIETARY DUCT CHAMBER MAY BE USED SUBJECT TO REVIEW BY IRISH WATER.
6. LONG RADIUS BENDS MAY BE USED FOR CHANGES IN DIRECTION OF UP TO 45°. DUCT CHAMBERS SHALL BE PROVIDED FOR ALL BENDS GREATER THAN 45°.
7. DUCT CHAMBERS TO BE LOCATED AT 50m INTERVALS MAXIMUM.
8. APPROPRIATE MARKER TAPE SHALL BE LAID 200mm ABOVE THE EXTERNAL CROWN OF THE DUCT AND SHOULD INCORPORATE REINFORCED TRACING WIRE. TRACING WIRES SHALL BE CONNECTED ACROSS CHAMBERS. ELECTRICAL MARKER TAPE TO BE USED IN ACCORDANCE WITH ESB SPECIFICATION.
9. 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 REVIEW BY IRISH WATER.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
11. ALL DUCTING TO BE INSTALLED WITH DRAW CORDS/ROPES, TO ALLOW THE PULL THROUGH OF CABLES.
12. CABLE DUCT INTERFACE WITH CHAMBER WALL TO BE SEALED TO PREVENT INGRESS OF GROUNDWATER TO CHAMBER.
13. DRAIN POINT TO BE PROVIDED FROM LOWEST LOCATED DUCT CHAMBER



PLAN



SECTION A - A

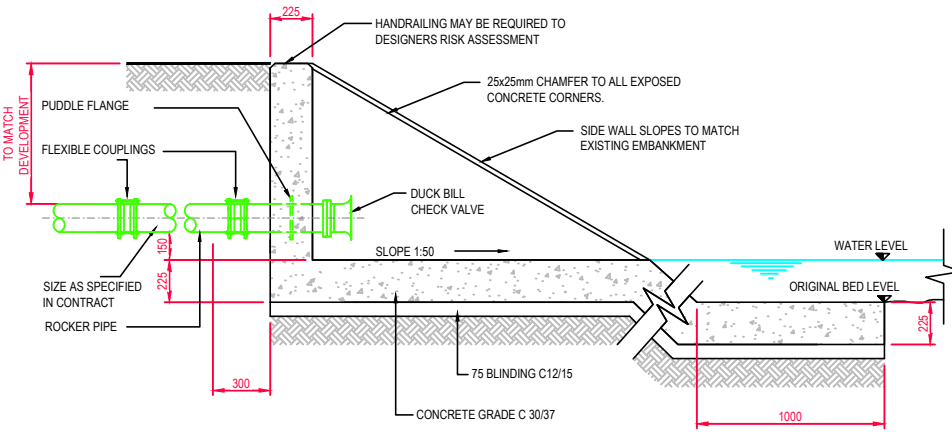


SECTION B - B

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

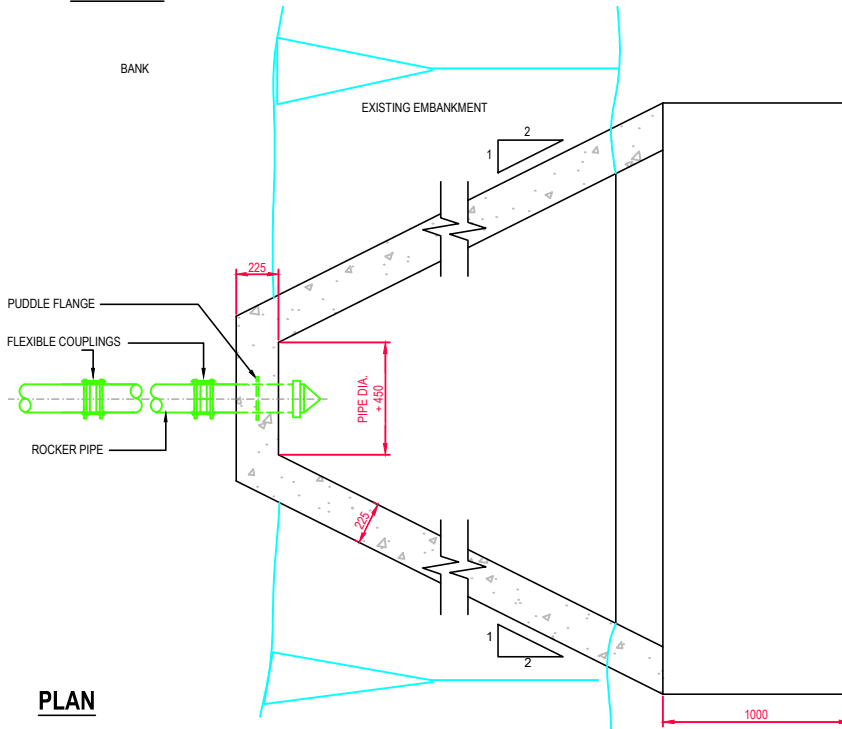
	<b>STANDARD DETAILS - WASTEWATER</b>					SCALE NOT TO SCALE	DATE SEPT. 2015	
	3	07/20	RH	TOC	Included drain point, updated cover bedding spec / brickwork notes and updated notes	TITLE	DRAWING No. <b>STD-WW-19</b>	REV <b>3</b>
	2	11/17	JMC	TOC	Revised notes			
	1	08/16	JMC	TOC	Revised notes to cover			
	0	09/15	JMC	TOC	Initial Issue			
No.	Date	Drn	Chk	Description	App			
<b>DUCT CHAMBER</b>								



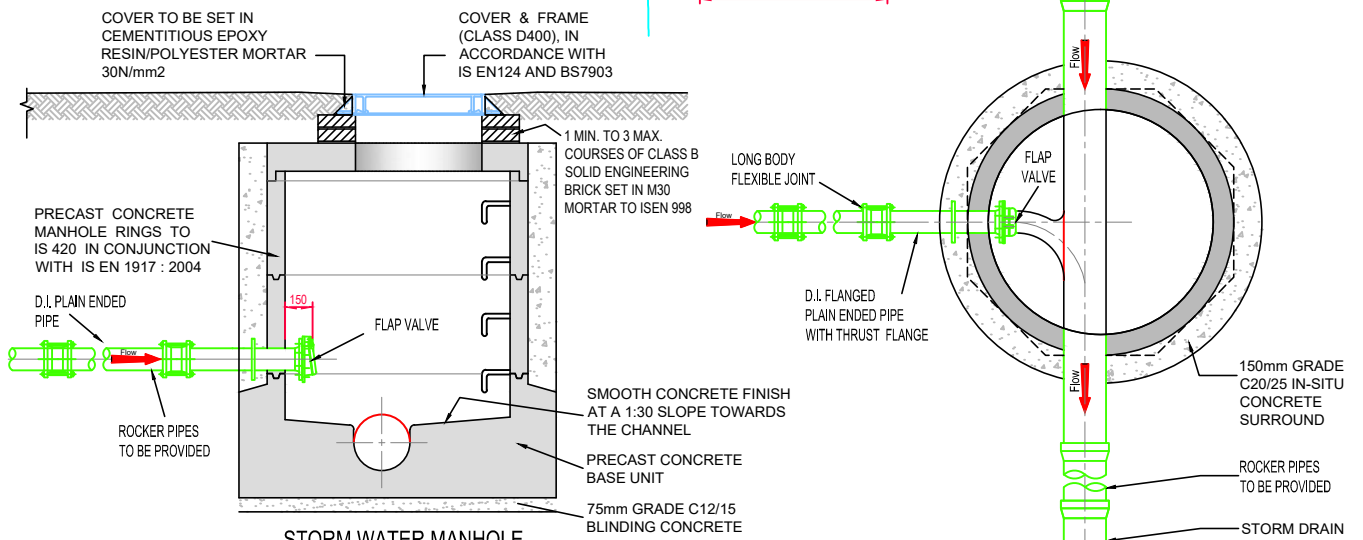


**SECTION**

1. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. STRUCTURAL DESIGN & REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
3. FULL FINAL DETAIL MUST BE REVIEWED BY IRISH WATER AND RELEVANT REGULATORY AUTHORITIES.
4. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
5. BACKFILL AND REINSTATEMENT OF THE RIVER BED AND BANK TO BE SUBJECT TO AGREEMENT WITH RELEVANT AUTHORITY & IRISH WATER.
6. 25x25mm CHAMFER TO ALL EXPOSED CONCRETE CORNERS.



**PLAN**



**SECTION**

**PLAN**

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

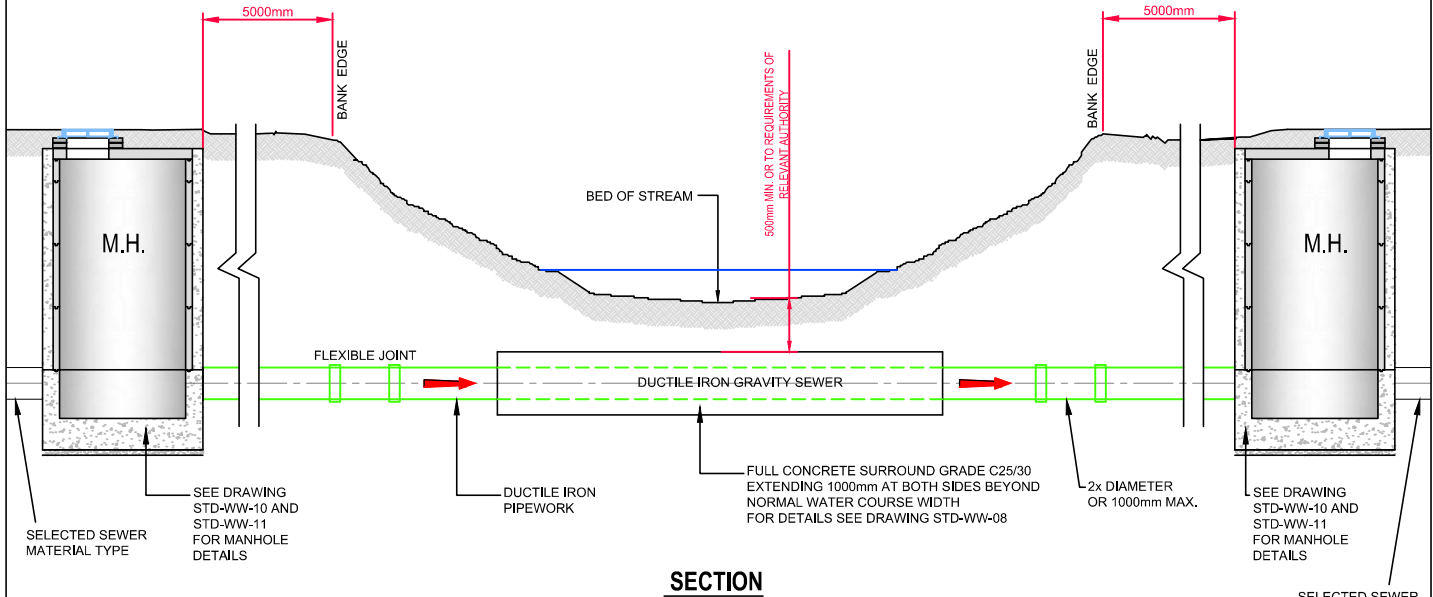


No.	Date	Drn	Chk	Description	App
2	07/20	RH	TOC	Emergency Overflow to Storm Sewer included	MOD
1	11/17	JM	TOC	Notes revised	MOD
0	09/15	JM	TOC	Initial Issue	SL

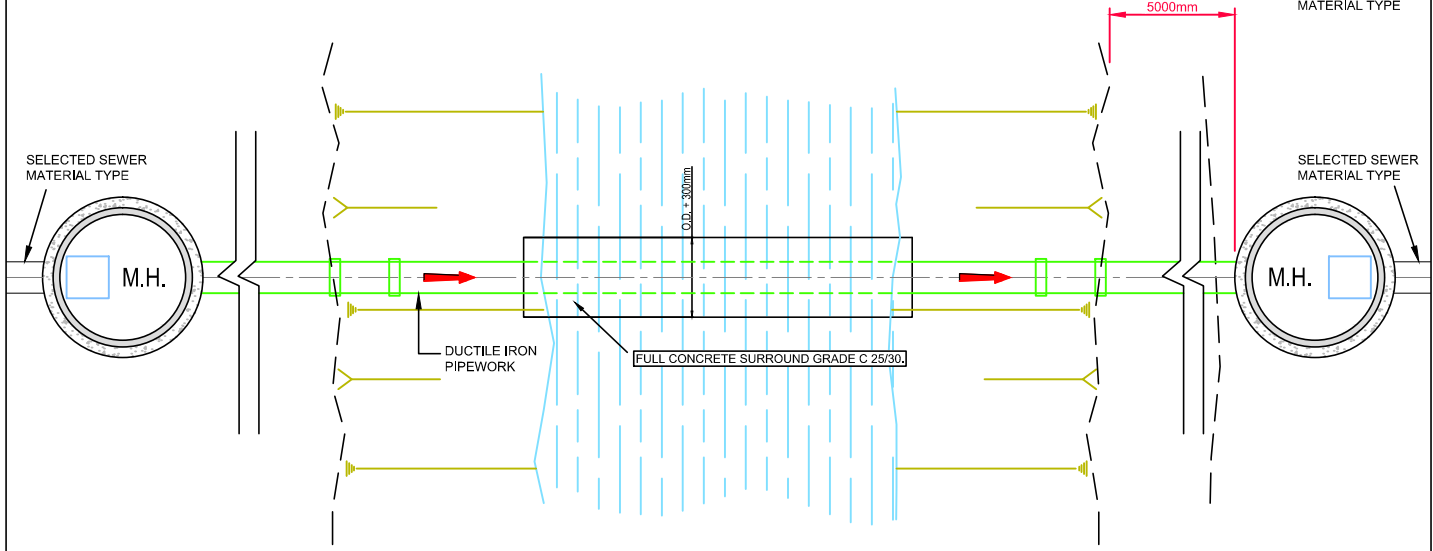
STANDARD DETAILS - WASTEWATER	
TITLE	SCALE
EMERGENCY OVERFLOW STRUCTURE & EMERGENCY OVERFLOW TO STORM SEWER	NOT TO SCALE
	DATE
	SEPT. 2015
	SCALE
	NOT TO SCALE
	DATE
	SEPT. 2015
	SCALE
	NOT TO SCALE
	DATE
	SEPT. 2015

DRAWING No.	REV
STD-WW-20	2

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. TWO FLEXIBLE JOINTS SHALL BE PROVIDED WITHIN A DISTANCE OF 1000mm OR 2x DIAMETER OF PIPE (WHICHEVER IS THE GREATER) FROM BOTH ENDS OF CONCRETE SURROUND.
4. ALL DUCTILE IRON PIPE WORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
5. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
6. ALL MANHOLES TO BE LOCATED A MINIMUM OF 5000mm FROM THE BANK EDGE TO ALLOW FOR FUTURE ACCESS.
7. BACKFILL AND REINSTATEMENT OF THE RIVER BED AND BANK TO BE SUBJECT TO AGREEMENT WITH RELEVANT AUTHORITY & IRISH WATER.
8. PIPE BETWEEN MANHOLES AT DITCH / STREAM CROSSING TO BE DUCTILE IRON.



**SECTION**



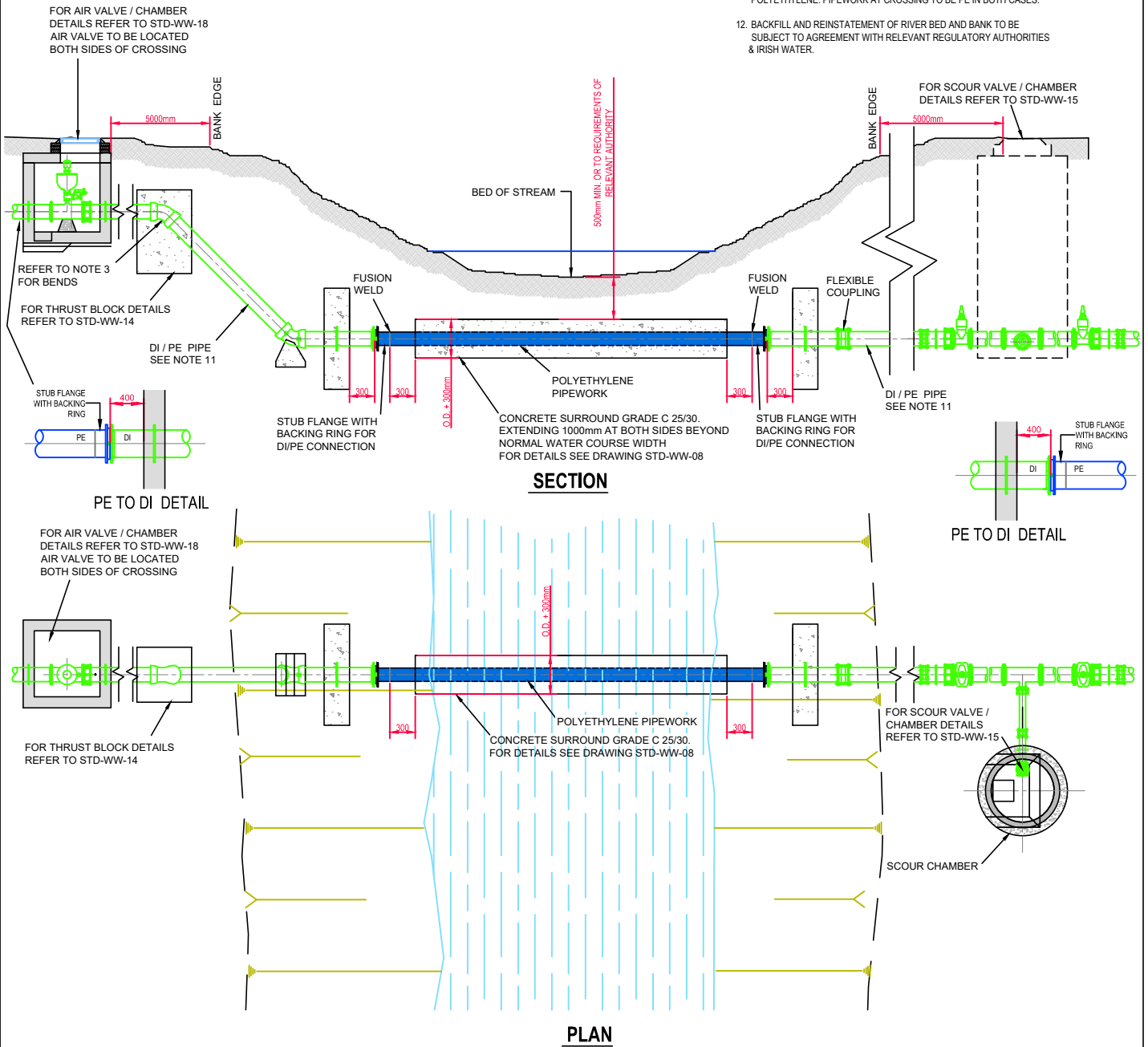
**PLAN**

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

	<b>STANDARD DETAILS - WASTEWATER</b>						SCALE	DATE
							NOT TO SCALE	SEPT. 2015
	TITLE						DRAWING No.	REV
	<b>TYPICAL DITCH / STREAM CROSSING FOR GRAVITY SEWER (Sheet 1 of 2)</b>						<b>STD-WW-21</b>	<b>2</b>
No.	Date	Drn	Chk	Description	App			
2	07/20	RH	TOC	Pipe materials noted, notes added	MOD			
1	11/17	JMC	TOC	Updated pipe depth dimension	MOD			
0	09/15	JMC	TOC	Initial Issue	SL			



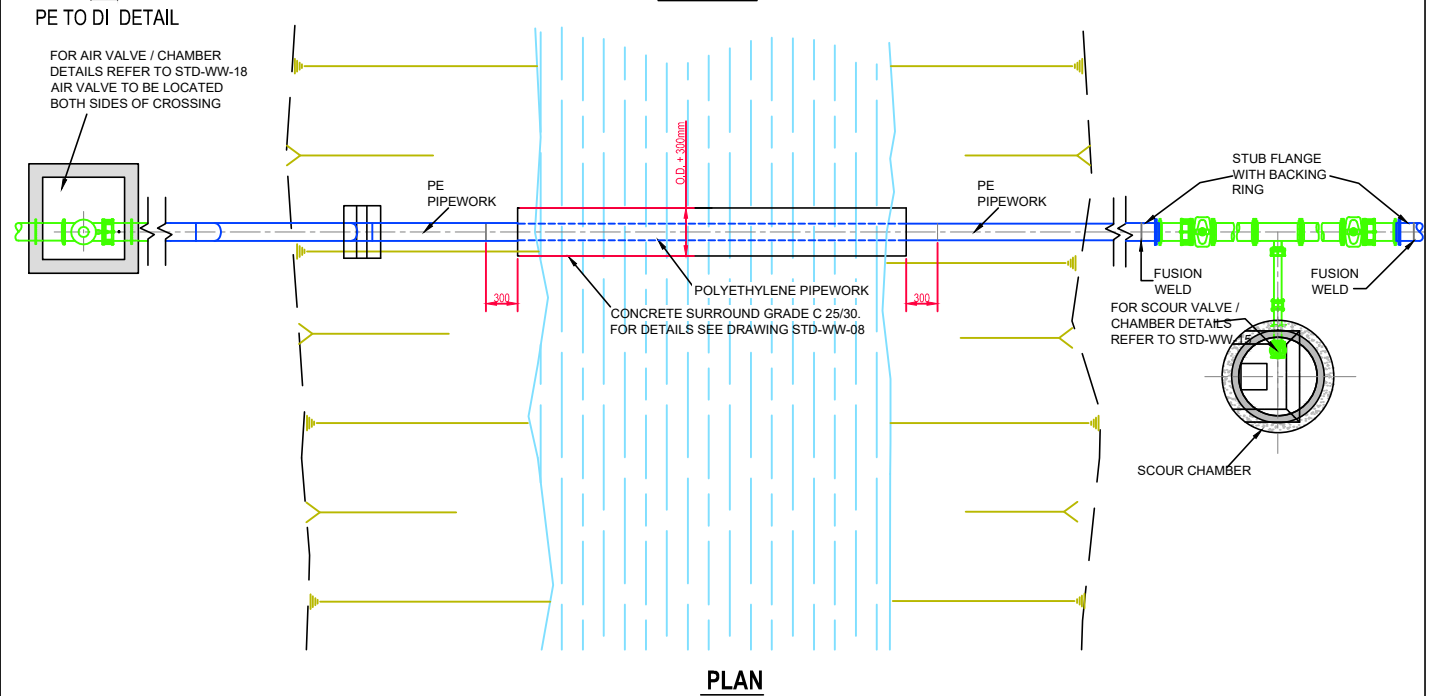
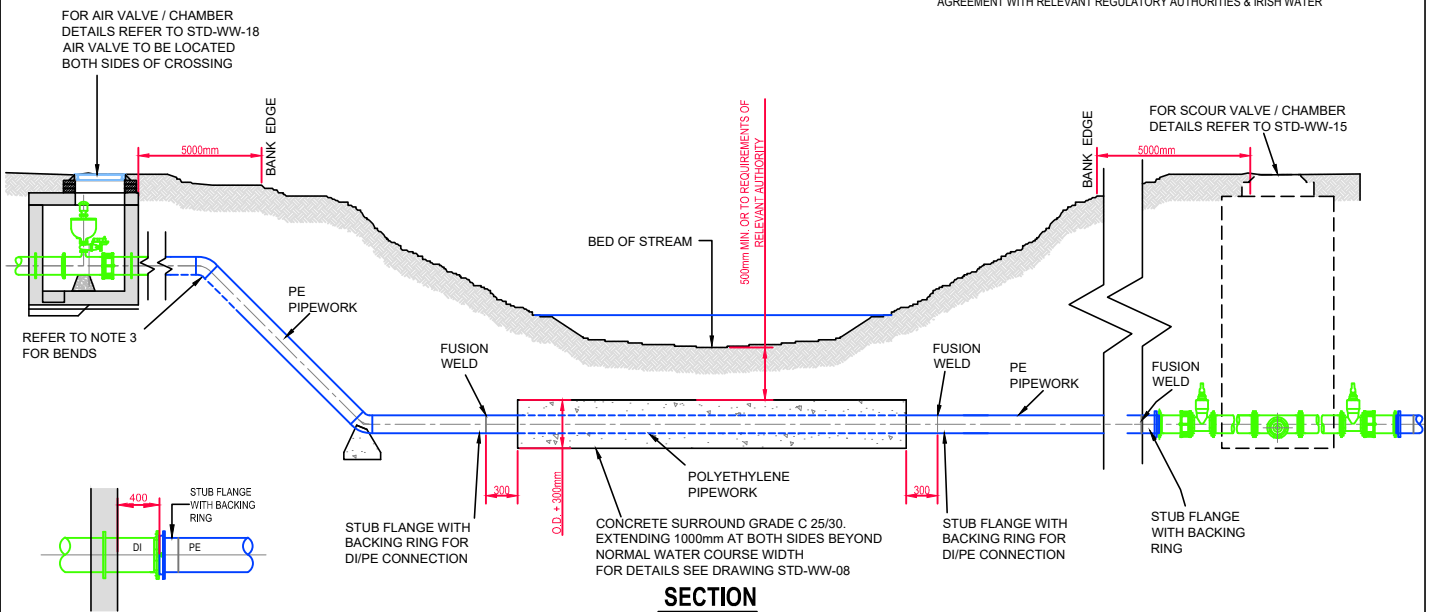
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. BENDS AT RESPECTIVE CROSSINGS SHALL BE INDICATED ON THE LONGITUDINAL SECTION DRAWING.
4. PIPEWORK THROUGH CROSSING TO BE POLYETHYLENE & JOINED USING BUTT FUSION WELDING.
5. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 8076 BEFORE BEING CAST INTO CONCRETE.
6. THRUST BLOCKS TO BE PROVIDED AS PER STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
7. ALL DUCTILE IRON PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
8. ALL PE PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201 : 2011.
9. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
10. ALL MANHOLES TO BE LOCATED A MINIMUM OF 5000mm FROM THE BANK EDGE TO ALLOW FOR FUTURE ACCESS. MANHOLE LOCATIONS MUST BE REVIEWED BY IRISH WATER & READILY ACCESSIBLE BY ALL OPERATION & MAINTENANCE EQUIPMENT, INCLUDING A VACUUM TANKER.
11. PIPEWORK OF RISING MAIN CAN BE EITHER DUCTILE IRON OR POLYETHYLENE. PIPEWORK AT CROSSING TO BE PE IN BOTH CASES.
12. BACKFILL AND REINSTATEMENT OF RIVER BED AND BANK TO BE SUBJECT TO AGREEMENT WITH RELEVANT REGULATORY AUTHORITIES & IRISH WATER.



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

						<b>STANDARD DETAILS - WASTEWATER</b>		SCALE NOT TO SCALE	DATE SEPT. 2015
						TITLE		DRAWING No.	REV
						TYPICAL DITCH / STREAM CROSSING FOR RISING MAIN (Sheet 2 of 2)		STD-WW-22	2
	No.	Date	Drn	Chk	Description	App			
2	07/20	RH	TOC	PE details added, notes added	MOD				
1	11/17	JM	TOC	Updated pipe depth dimension & note 10 revised	MOD				
0	09/15	JM	TOC	Initial Issue	SL				

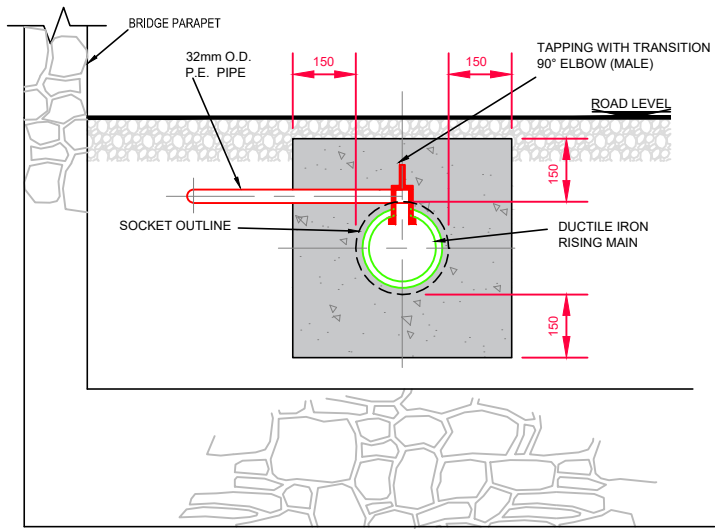
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. BENDS AT RESPECTIVE CROSSINGS SHALL BE INDICATED ON THE LONGITUDINAL SECTION DRAWING.
4. PIPEWORK THROUGH CROSSING TO BE POLYETHYLENE & JOINED USING BUTT FUSION WELDING.
5. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 8076 BEFORE BEING CAST INTO CONCRETE.
6. THRUST BLOCKS TO BE PROVIDED AS PER STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
7. ALL DUCTILE IRON PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
8. ALL PE PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201 : 2011.
9. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
10. ALL MANHOLES TO BE LOCATED A MINIMUM OF 5000mm FROM THE BANK EDGE TO ALLOW FOR FUTURE ACCESS. MANHOLE LOCATIONS MUST BE REVIEWED BY IRISH WATER & READILY ACCESSIBLE BY ALL OPERATION & MAINTENANCE EQUIPMENT, INCLUDING A VACUUM TANKER.
11. BACKFILL AND REINSTATEMENT OF RIVER BED AND BANK TO BE SUBJECT TO AGREEMENT WITH RELEVANT REGULATORY AUTHORITIES & IRISH WATER



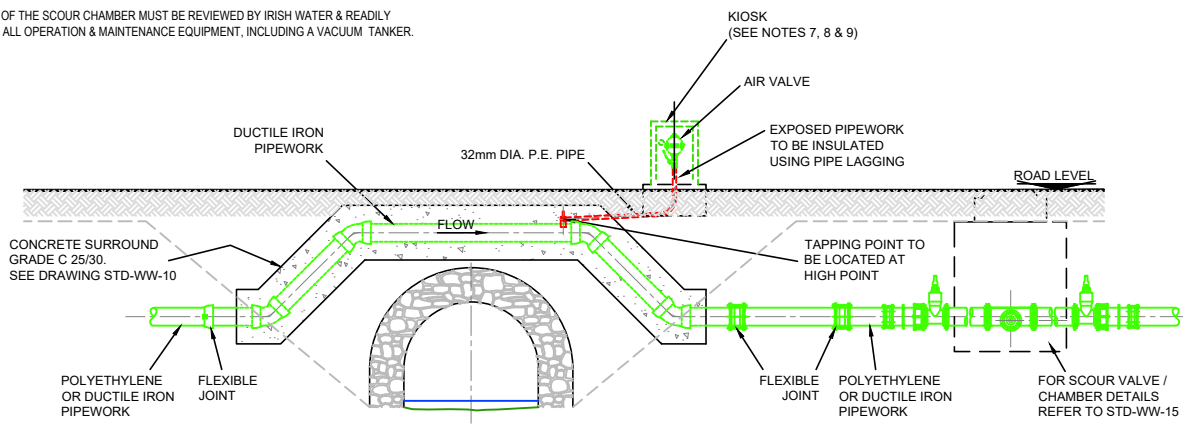
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

						<b>STANDARD DETAILS - WASTEWATER</b>		SCALE NOT TO SCALE	DATE SEPT. 2015
						TITLE <b>TYPICAL DITCH / STREAM CROSSING FOR POLYETHYLENE RISING MAIN</b>		DRAWING No. <b>STD-WW-22A</b>	REV <b>0</b>
0	07/20	RH	TOC	Initial Issue	MOD				
No.	Date	Drn	Chk	Description	App				

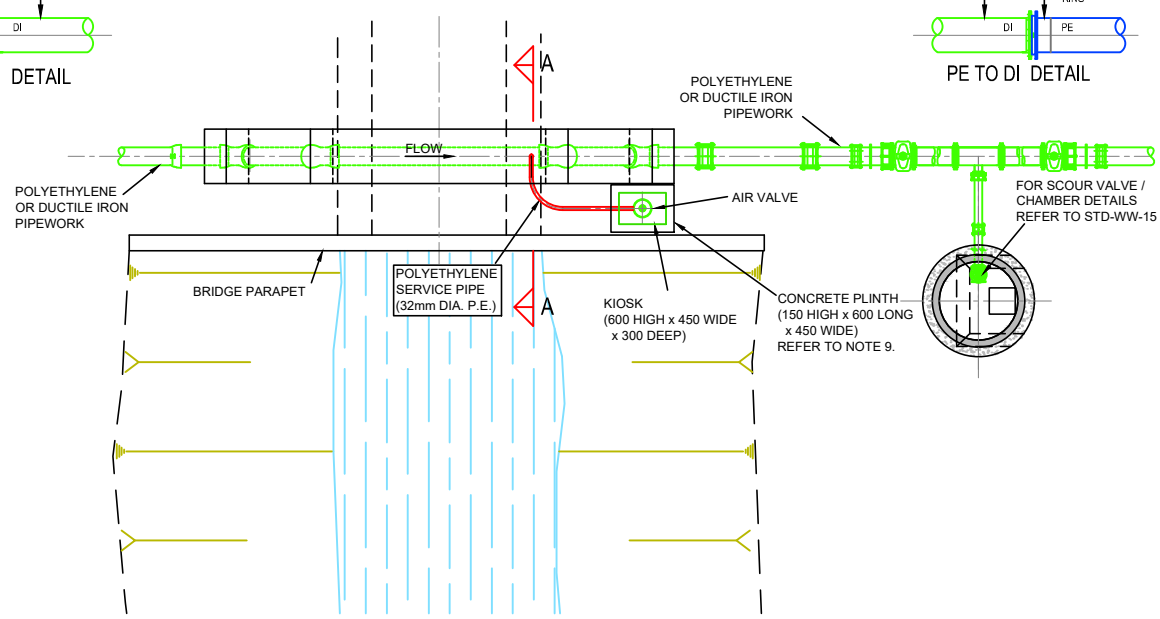
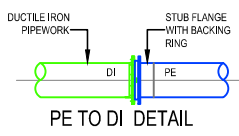
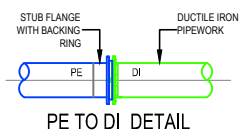
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. AT BRIDGE CROSSING DUCTILE IRON PIPE WORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
3. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
4. BENDS AT RESPECTIVE CROSSINGS SHALL BE INDICATED ON THE LONGITUDINAL SECTION DRAWING.
5. THE DEVELOPER IS TO SEEK ADVICE FROM IRISH WATER AS TO WHETHER A DUPLICATE RISING MAIN IS TO BE PROVIDED THROUGH THE BRIDGE CROSSING. IF NECESSARY THE DEVELOPER WILL SUBMIT A DESIGN TO IRISH WATER FOR REVIEW.
6. THRUST BLOCKS TO BE PROVIDED AS PER STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
7. THE QUALITY OF THE KIOSK CONSTRUCTION SHALL ENSURE THAT THE FOLLOWING IS ACHIEVED:
  - A) A THERMAL TRANSMITTANCE OF 1.5W PER M<sup>2</sup> K.
  - B) A FIRE RESISTANCE (RETENTION OF STABILITY, INTEGRITY AND INSULATION) EQUIVALENT TO CLASS 2 OF BS 476, WHEN TESTED IN ACCORDANCE WITH BS 476 FOR A PERIOD EXCEEDING 30 MINUTES.
8. KIOSK (MIN. 600 HIGH x 450 WIDE x 300mm DEEP) TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED STEEL (MIN. 3mm THICKNESS) TO BS EN 1461. STAINLESS STEEL MAY BE USED AS AN ALTERNATIVE KIOSK MATERIAL, PARTICULARLY IN SEVERE ENVIRONMENTS, SUBJECT TO AGREEMENT WITH IRISH WATER. COLOUR TO BE HOLLY GREEN BS 4800 14 C 39, TO HAVE HINGED, LOCKABLE ACCESS DOOR (HINGES AND LOCKS TO BE STAINLESS STEEL).
9. THE KIOSK SHALL BE LOCATED OFF THE FOOTPATH SO AS NOT TO IMPEDE PEDESTRIANS AND POSITIONED SO AS TO FACILITATE SAFE ACCESS FOR MAINTENANCE PERSONNEL.
10. KIOSK TO BE FITTED WITH A VENT STACK TO MANUFACTURERS DETAIL IN SENSITIVE AREAS.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
12. IN INSENSITIVE AREAS A VENT STACK IS NOT REQUIRED. LOUVRE VENT TO BE PROVIDED IN KIOSK.
13. DETAIL FOR RISING MAIN FOR PE PIPEWORK TO BE AS PER THIS DETAIL. BRIDGE CROSSING PIPEWORK TO BE DUCTILE IRON IN BOTH CASES.
14. THE LOCATION OF THE SCOUR CHAMBER MUST BE REVIEWED BY IRISH WATER & READILY ACCESSIBLE BY ALL OPERATION & MAINTENANCE EQUIPMENT, INCLUDING A VACUUM TANKER.



SECTION A-A  
(AIR VALVE CONNECTION)



SECTION



PLAN

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

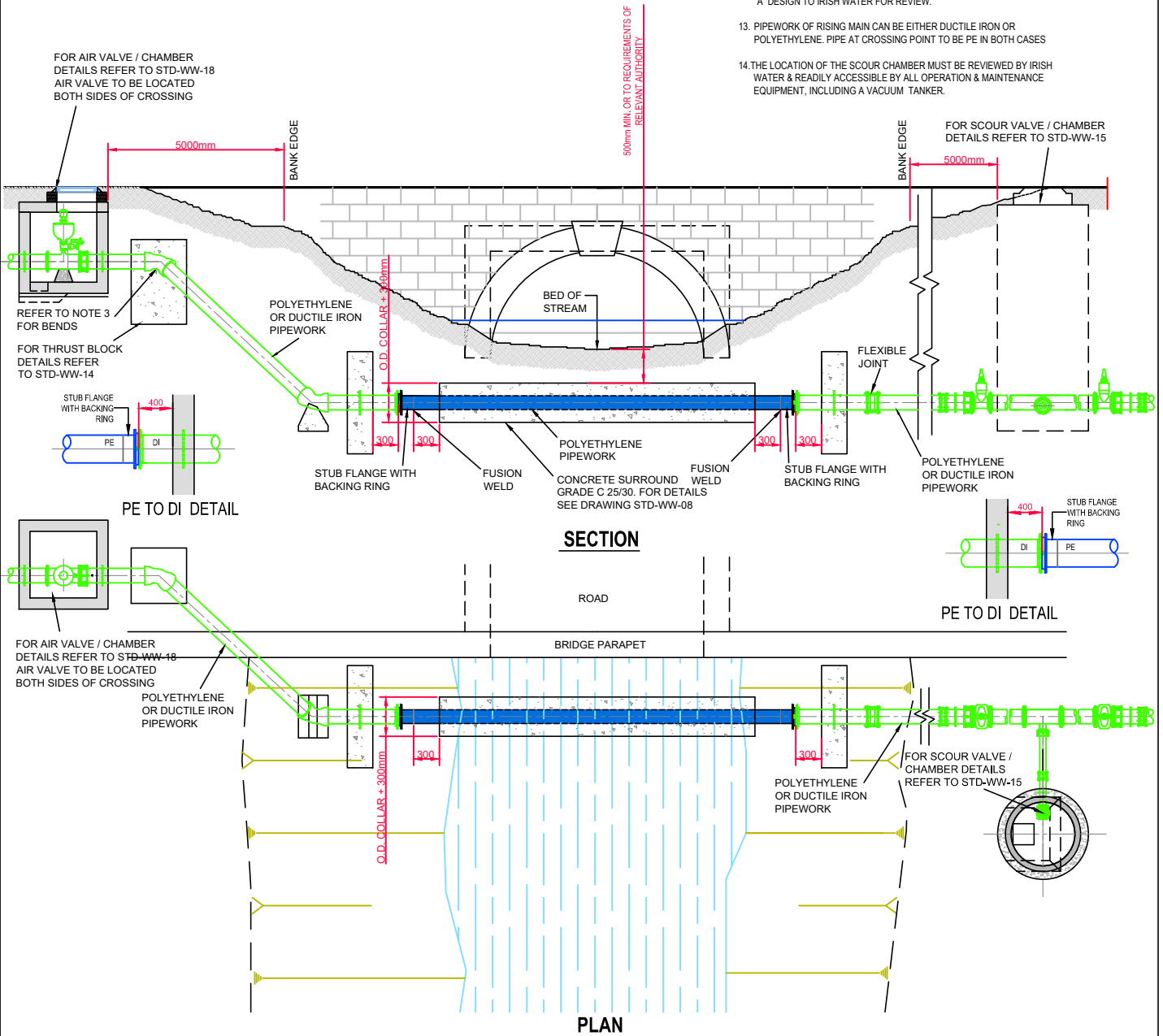


No.	Date	Drn	Chk	Description	App
2	07/20	RH	TOC	PE details added scour chamber relocated	MOD
1	11/17	JMC	TOC	Notes 5 & 14 revised	MOD
0	09/15	JMC	TOC	Initial Issue	SL

<b>STANDARD DETAILS - WASTEWATER</b>	
TITLE	
<b>TYPICAL BRIDGE CROSSING FOR RISING MAIN (Sheet 1 of 2)</b>	

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. <b>STD-WW-23</b>	REV <b>2</b>

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. BENDS AT RESPECTIVE CROSSINGS SHALL BE INDICATED ON THE LONGITUDINAL SECTION DRAWING.
4. PIPEWORK THROUGH CROSSING TO BE POLYETHYLENE & JOINED USING BUTT FUSION WELDING.
5. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6076 BEFORE BEING CAST INTO CONCRETE.
6. THRUST BLOCKS TO BE PROVIDED AS PER STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
7. ALL DUCTILE IRON PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
8. ALL PE PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201 : 2011.
9. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
10. ALL MANHOLES TO BE LOCATED A MINIMUM OF 5000mm FROM THE BANK EDGE TO ALLOW FOR FUTURE ACCESS.
11. BACKFILL AND REINSTATEMENT REQUIREMENTS OF THE RIVER BED AND BANK IS SUBJECT TO AGREEMENT WITH RELEVANT REGULATORY AUTHORITIES & IRISH WATER.
12. THE DEVELOPER IS TO SEEK ADVICE FROM IRISH WATER AS TO WHETHER A DUPLICATE RISING MAIN IS TO BE PROVIDED THROUGH THE BRIDGE CROSSING. IF NECESSARY THE DEVELOPER WILL SUBMIT A DESIGN TO IRISH WATER FOR REVIEW.
13. PIPEWORK OF RISING MAIN CAN BE EITHER DUCTILE IRON OR POLYETHYLENE. PIPE AT CROSSING POINT TO BE PE IN BOTH CASES
14. THE LOCATION OF THE SCOUR CHAMBER MUST BE REVIEWED BY IRISH WATER & READILY ACCESSIBLE BY ALL OPERATION & MAINTENANCE EQUIPMENT, INCLUDING A VACUUM TANKER.



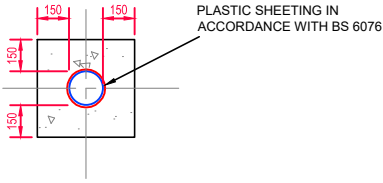
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT



No.	Date	Drn	Chk	Description	App
2	07/20	RH	TOC	PE details added	MOD
1	11/17	JMC	TOC	Updated pipe depth dimension & revised notes	MOD
0	09/15	JMC	TOC	Initial Issue	SL

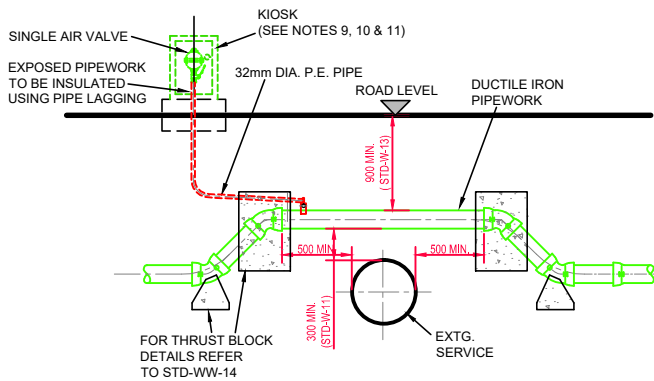
STANDARD DETAILS - WASTEWATER	
TITLE	TYPICAL BRIDGE CROSSING FOR RISING MAIN (Sheet 2 of 2)

SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
STD-WW-24	2

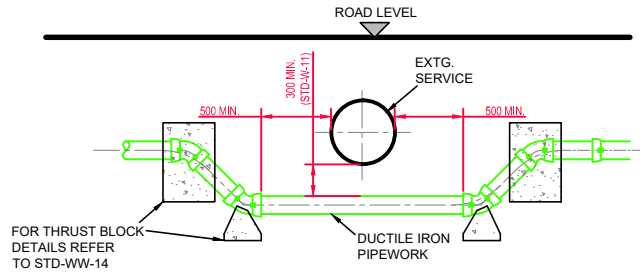


CROSS SECTION  
(CONCRETE SURROUND)

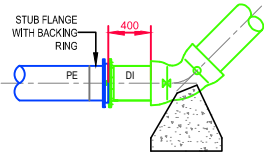
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. BENDS AT RESPECTIVE CROSSINGS SHALL BE INDICATED ON THE LONGITUDINAL SECTION DRAWING.
4. PIPEWORK AT CROSSING POINT TO BE DUCTILE IRON TO IS EN 598.
5. THRUST BLOCKS TO BE PROVIDED AS PER STD-WW-14 AT ALL TEES, BENDS, TAPERS, DEAD ENDS AND PIPES AT STEEP SLOPES.
6. THE DEVELOPER IS TO SEEK ADVICE FROM IRISH WATER AS TO WHETHER A DUPLICATE MAIN IS TO BE PROVIDED AT THE CROSSING. IF NECESSARY THE DEVELOPER IS TO SUBMIT A DESIGN TO IRISH WATER FOR REVIEW.
7. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
8. ALL DUCTILE IRON PIPEWORK TO BE IN ACCORDANCE WITH IS EN 598. ALL POLYETHYLENE PIPEWORK TO BE IN ACCORDANCE WITH IS EN 12201.
9. THE QUALITY OF THE KIOSK CONSTRUCTION SHALL ENSURE THAT THE FOLLOWING IS ACHIEVED:
  - A) A THERMAL TRANSMITTANCE OF 1.5W PER m<sup>2</sup> K.
  - B) A FIRE RESISTANCE (RETENTION OF STABILITY, INTEGRITY AND INSULATION) EQUIVALENT TO CLASS 2 OF BS 476, WHEN TESTED IN ACCORDANCE WITH BS 476 FOR A PERIOD EXCEEDING 30 MINUTES.
10. KIOSK (MIN. 600 HIGH x 450 WIDE x 300mm DEEP) TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED STEEL (MIN. 3mm THICKNESS) TO BS EN 1461. STAINLESS STEEL MAY BE USED AS AN ALTERNATIVE KIOSK MATERIAL, PARTICULARLY IN SEVERE ENVIRONMENTS, SUBJECT TO AGREEMENT WITH IRISH WATER. COLOUR TO BE HOLLY GREEN BS 4800 14 C 39, TO HAVE HINGED, LOCKABLE ACCESS DOOR (HINGES AND LOCKS TO BE STAINLESS STEEL).
11. THE KIOSK SHALL BE LOCATED OFF THE FOOTPATH SO AS NOT TO IMPEDE PEDESTRIANS AND POSITIONED SO AS TO FACILITATE SAFE ACCESS FOR MAINTENANCE PERSONNEL.
12. AIR VALVE TAPPING TO BE LOCATED AT HIGHEST POINT OF CROSSING.



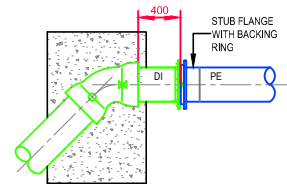
DETAIL 1  
(RISING MAIN CROSSING  
OVER EXISTING SERVICES)



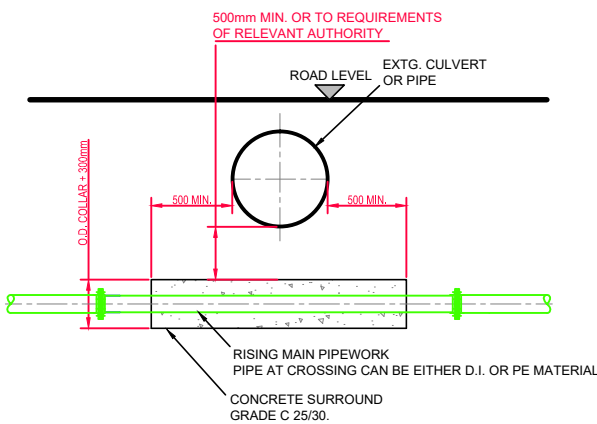
DETAIL 2  
(RISING MAIN CROSSING  
UNDER EXISTING SERVICES)



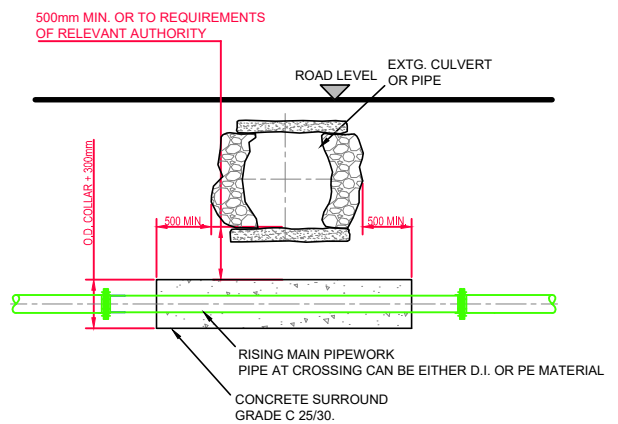
PE TO DI DETAIL



PE TO DI DETAIL



DETAIL 3  
(RISING MAIN CROSSING UNDER  
EXTG. SERVICE / CULVERT / PIPE)



DETAIL 4  
(RISING MAIN CROSSING UNDER  
EXTG. CULVERT)

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



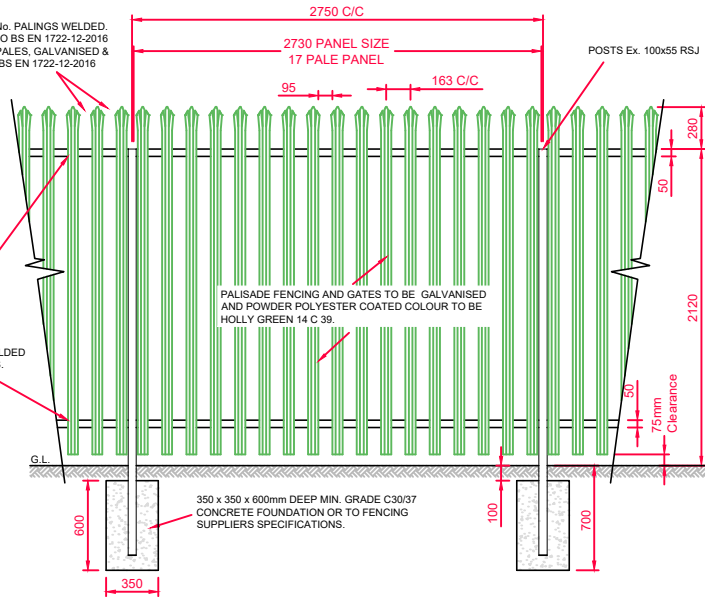
0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Drn	Chk	Description	App

STANDARD DETAILS - WASTEWATER	
TITLE TYPICAL CULVERT & SERVICES CROSSING DETAILS FOR RISING MAIN	

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. STD-WW-24A	REV 0

2.5mm THK. x 17 No. PALINGS WELDED. CONSTRUCTED TO BS EN 1722-12-2016  
FILLET WELDED PALES, GALVANISED & PVC COATED TO BS EN 1722-12-2016

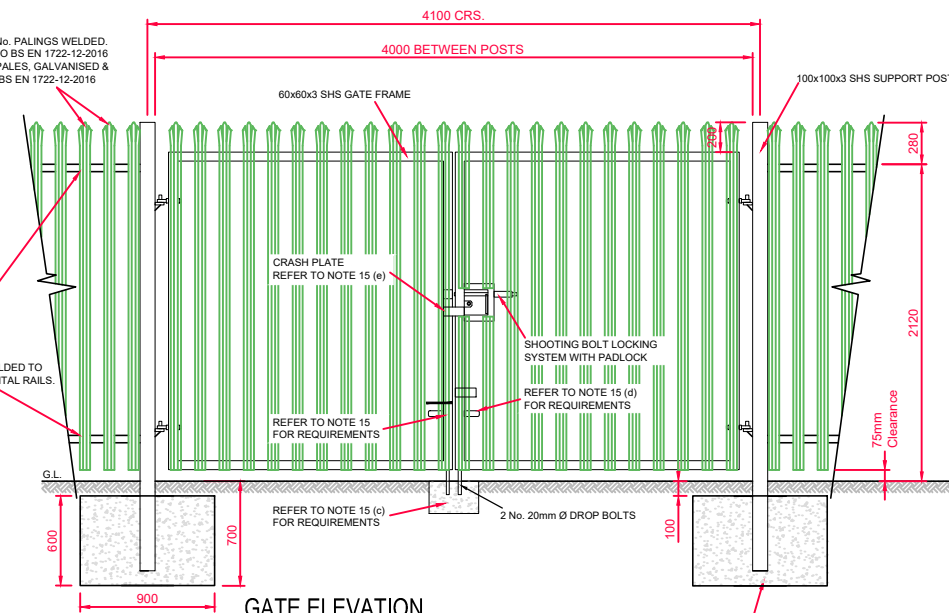
PALES TO BE WELDED TO 50x50x5 RAILS.



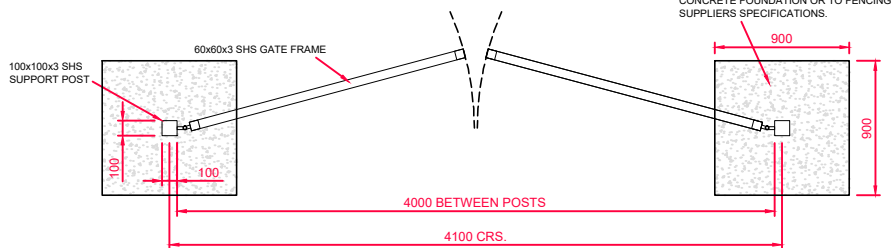
PANEL - ELEVATION

2.5mm THK. x 17 No. PALINGS WELDED. CONSTRUCTED TO BS EN 1722-12-2016  
FILLET WELDED PALES, GALVANISED & PVC COATED TO BS EN 1722-12-2016

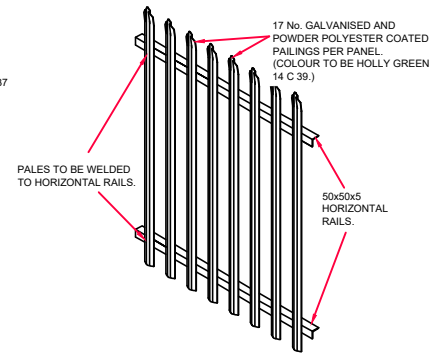
PALES TO BE WELDED TO 50x50x5 HORIZONTAL RAILS.



GATE ELEVATION



PLAN



3D VIEW

1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SECURITY FENCING SHALL COMPRISE 2.4m HIGH, CORROSION RESISTANT MILD STEEL FENCING, GALVANISED AND PLASTIC COATED FINISHED, WITH SIMILAR TYPE ACCESS GATES.
3. THE ACCESS GATES SHALL BE OF SUFFICIENT WIDTH TO ACCOMMODATE MAINTENANCE VEHICLES, TANKERS, ETC. THE SECURITY GATES SHALL BE PROVIDED WITH SLIDE BOLTS, SHOOTING BOLTS AND PADLOCKS. IF OPENING OUTWARDS, THE ACCESS GATES SHALL BE SET BACK FROM PARKING AND ACCESS AREAS BY THE WIDTH OF THE LEAF OF THE GATE. BOLTS - UNLESS TAMPER RESISTANT FIXINGS ARE USED, ALL BOLTS TO THE ACCESS GATES & FENCING SHALL BE BURRED OVER.
4. GATE HINGES SHALL BE DESIGNED SO THAT IT IS IMPOSSIBLE TO REMOVE THE GATE BY LIFTING WHEN IT IS IN A CLOSED & LOCKED POSITION. DROP BOLTS SHALL BE FITTED TO EACH GATE LEAF IN SUCH A WAY THAT THEY CANNOT BE REMOVED BUT ALLOW THE GATE TO BE SECURED IN BOTH THE OPEN & CLOSED POSITION.
5. THE SECURITY RATING SHALL BE EITHER BASIC +, ENHANCED OR ENHANCED +. THE FENCE STANDARD WILL BE BASED ON THE SECURITY RATING OF THE SITE & IS TO BE AGREED WITH IRISH WATER.
6. CORNER BRACING AND POST DETAIL TO MANUFACTURER'S SPECIFICATION.
7. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
8. ALL FENCE MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH IS EN 1722-14 : 2006.
9. DIMENSIONS OF GATE PILLARS, GATE FRAME, FENCE PILLARS, FENCE RUNNERS, DIAGONALS, ETC. TO BE TO MANUFACTURER'S SPECIFICATION.
10. FENCE/GATE DESIGN AND DETAILS TO BE PROVIDED TO IRISH WATER FOR REVIEW/ VETTING BEFORE MANUFACTURE.
11. PEDESTRIAN GATE SHALL BE PROVIDED IF DEEMED NECESSARY BY IRISH WATER.
12. COLOUR TO BE HOLLY GREEN 14 C 39 IN ACCORDANCE WITH BS 4800:2011.
13. A 300mm WIDE x 150mm DEEP CONCRETE SILL (IF REQUIRED BY IRISH WATER) GRADE C20/25 CONCRETE SHALL BE PROVIDED TO IRISH WATER'S REQUIREMENTS (ENHANCED + SECURITY RATING ONLY).
14. THE GATES SHALL HAVE THE FOLLOWING SECURITY FEATURES:
  - a. GATE LOCKING MECHANISM SHALL INCLUDE A SHROUD COVER PROTECTING THE PADLOCK FROM ATTACK AND THE SLIP BOLT SHALL BE OF HIGH CARBON STEEL - TECHNICAL SPECIFICATION TO BE INCLUDED IN THE DESIGN SUBMISSION FOR REVIEW / VETTING BEFORE MANUFACTURE.
  - b. DROP BOLTS SHALL BE FITTED TO EACH GATE LEAF IN SUCH A WAY THAT THEY CANNOT BE REMOVED BUT ALLOW THE GATE TO BE SECURED IN BOTH THE OPEN POSITION, AND USING ONE OF THE DROP BOLTS TO LOCK IN A CLOSED POSITION.
  - c. DROP BOLTS SHALL BE A MINIMUM OF 650MM IN LENGTH WITH 50MM CONTAINED IN A STEEL RETAINER IMBEDDED IN CONCRETE, PROTECTING AGAINST FORCED ATTACK OF THE GATE.
  - d. THE DESIGN SHALL INCLUDE A METAL STAY ATTACHED TO THE LEAF 2 TO PREVENT THE DROP BOLT FROM BEING ACTIVATED ON LEAF 1 WHILE THE GATE IS IN A LOCKED POSITION AND TO ENSURE THAT THE GATE CANNOT BE LOCKED BY AN OPERATOR UNLESS A DROP BOLT IS ENGAGED IN A RECEIVER.
  - e. A CRASH PLATE SHALL BE INSTALLED ON LEAF 1 TO PREVENT LEAF 2 FROM SWINGING PAST THE CLOSE POINT OF THE GATE. THE CRASH PLATE SHALL IN ADDITION BE INSTALLED SUCH THAT IT PROVIDES RESTRICTED ACCESS TO THE SLIDE BOLT, IMPEDING ATTEMPTS OF CUTTING OF SAME.
  - f. BRACKETS ATTACHING FENCE PANELS TO FENCE POST TO BE CONSTRUCTED OF 5MM STEEL WITH TAMPER PROOF CONNECTIONS

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

STANDARD DETAILS - WASTEWATER

SCALE: NOT TO SCALE DATE: SEPT. 2019

TITLE

DRAWING No. REV

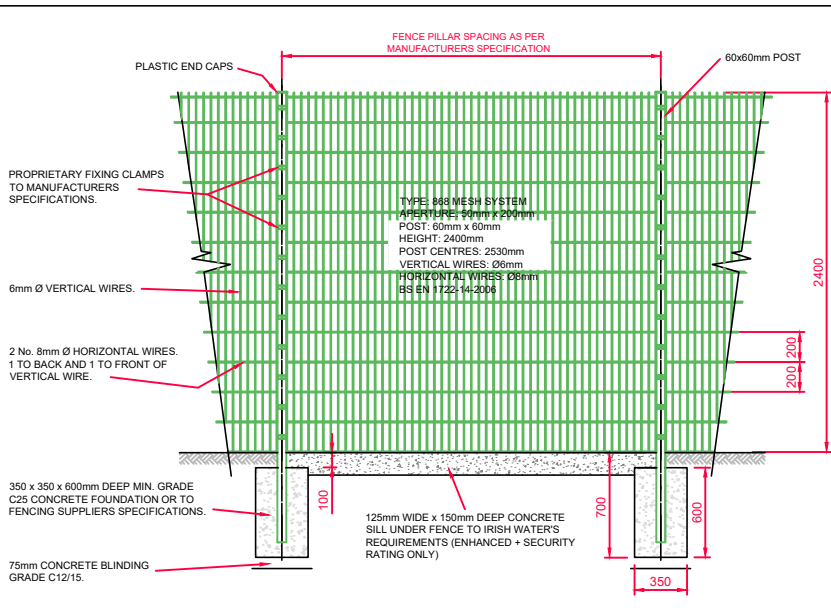
SECURITY GATE AND FENCING  
PALISADE OPTION (PREFERRED)

STD-WW-25 0



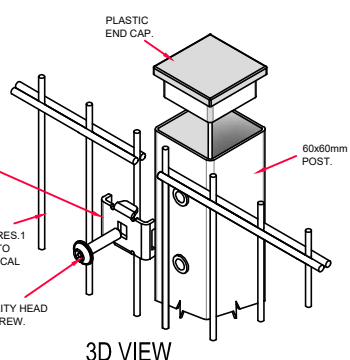
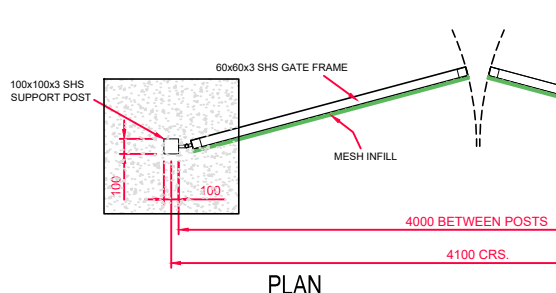
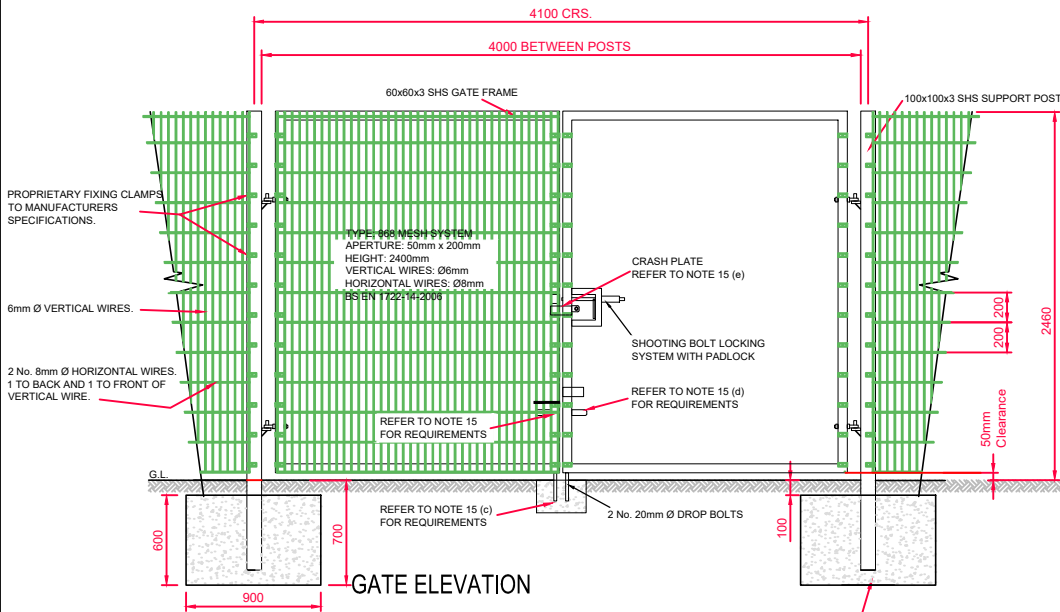
0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Drm	Chk	Description	App





1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SECURITY FENCING SHALL COMPRISE 2.4m HIGH, CORROSION RESISTANT MILD STEEL FENCING, GALVANISED AND PLASTIC COATED FINISHED, WITH SIMILAR TYPE ACCESS GATES.
3. THE ACCESS GATES SHALL BE OF SUFFICIENT WIDTH TO ACCOMMODATE MAINTENANCE VEHICLES, TANKERS, ETC. THE SECURITY GATES SHALL BE PROVIDED WITH SLIDE BOLTS, SHOOTING BOLTS AND PADLOCKS. IF OPENING OUTWARDS, THE ACCESS GATES SHALL BE SET BACK FROM PARKING AND ACCESS AREAS BY THE WIDTH OF THE LEAF OF THE GATE.
4. BOLTS - UNLESS TAMPER RESISTANT FIXINGS ARE USED, ALL BOLTS TO THE ACCESS GATES & FENCING SHALL BE BURRED OVER.
5. GATE HINGES SHALL BE DESIGNED SO THAT IT IS IMPOSSIBLE TO REMOVE THE GATE BY LIFTING WHEN IT IS IN A CLOSED & LOCKED POSITION. DROP BOLTS SHALL BE FITTED TO EACH GATE LEAF IN SUCH A WAY THAT THEY CANNOT BE REMOVED BUT ALLOW THE GATE TO BE SECURED IN BOTH THE OPEN & CLOSED POSITION.
6. THE SECURITY RATING SHALL BE EITHER BASIC +, ENHANCED OR ENHANCED +. THE FENCE STANDARD WILL BE BASED ON THE SECURITY RATING OF THE SITE & IS TO BE AGREED WITH IRISH WATER.
7. CORNER BRACING AND POST DETAIL TO MANUFACTURER'S SPECIFICATION.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
9. ALL FENCE MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH IS EN 1722-14:2006.
10. DIMENSIONS OF GATE PILLARS, GATE FRAME, FENCE PILLARS, FENCE RUNNERS, DIAGONALS, ETC. TO BE TO MANUFACTURER'S SPECIFICATION.
11. FENCE/GATE DESIGN AND DETAILS TO BE PROVIDED TO IRISH WATER FOR REVIEW/VETTING BEFORE MANUFACTURE.
12. PEDESTRIAN GATE SHALL BE PROVIDED IF DEEMED NECESSARY BY IRISH WATER.
13. COLOUR TO BE HOLLY GREEN 14 C 39 IN ACCORDANCE WITH BS 4800:2011.
14. A 300mm WIDE x 150mm DEEP CONCRETE SILL (IF REQUIRED BY IRISH WATER) GRADE C20/25 CONCRETE SHALL BE PROVIDED TO IRISH WATER'S REQUIREMENTS (ENHANCED + SECURITY RATING ONLY).
15. THE GATES SHALL HAVE THE FOLLOWING SECURITY FEATURES:
  - a. GATE LOCKING MECHANISM SHALL INCLUDE A SHROUD COVER PROTECTING THE PADLOCK FROM ATTACK AND THE SLIP BOLT SHALL BE OF HIGH CARBON STEEL - TECHNICAL SPECIFICATION TO BE INCLUDED IN THE TENDER SUBMISSION FOR REVIEW / VETTING BEFORE MANUFACTURE.
  - b. DROP BOLTS SHALL BE FITTED TO EACH GATE LEAF IN SUCH A WAY THAT THEY CANNOT BE REMOVED BUT ALLOW THE GATE TO BE SECURED IN BOTH THE OPEN POSITION, AND USING ONE OF THE DROP BOLTS TO LOCK IN A CLOSED POSITION.
  - c. DROP BOLTS SHALL BE A MINIMUM OF 650MM IN LENGTH WITH 50MM CONTAINED IN A STEEL RETAINER IMBEDDED IN CONCRETE, PROTECTING AGAINST FORCED ATTACK OF THE GATE.
  - d. THE DESIGN SHALL INCLUDE A METAL STAY ATTACHED TO THE LEAF 2 TO PREVENT THE DROP BOLT FROM BEING ACTIVATED ON LEAF 1 WHILE THE GATE IS IN A LOCKED POSITION AND TO ENSURE THAT THE GATE CANNOT BE LOCKED BY AN OPERATOR UNLESS A DROP BOLT IS ENGAGED IN A RECEIVER.
  - e. A CRASH PLATE SHALL BE INSTALLED ON LEAF 1 TO PREVENT LEAF 2 FROM SWINGING PAST THE CLOSE POINT OF THE GATE. THE CRASH PLATE SHALL IN ADDITION BE INSTALLED SUCH THAT IT PROVIDES RESTRICTED ACCESS TO THE SLIDE BOLT, IMPEDING ATTEMPTS OF CUTTING OF SAME.
  - f. BRACKETS ATTACHING FENCE PANELS TO FENCE POST TO BE CONSTRUCTED OF 5MM STEEL WITH TAMPER PROOF CONNECTIONS

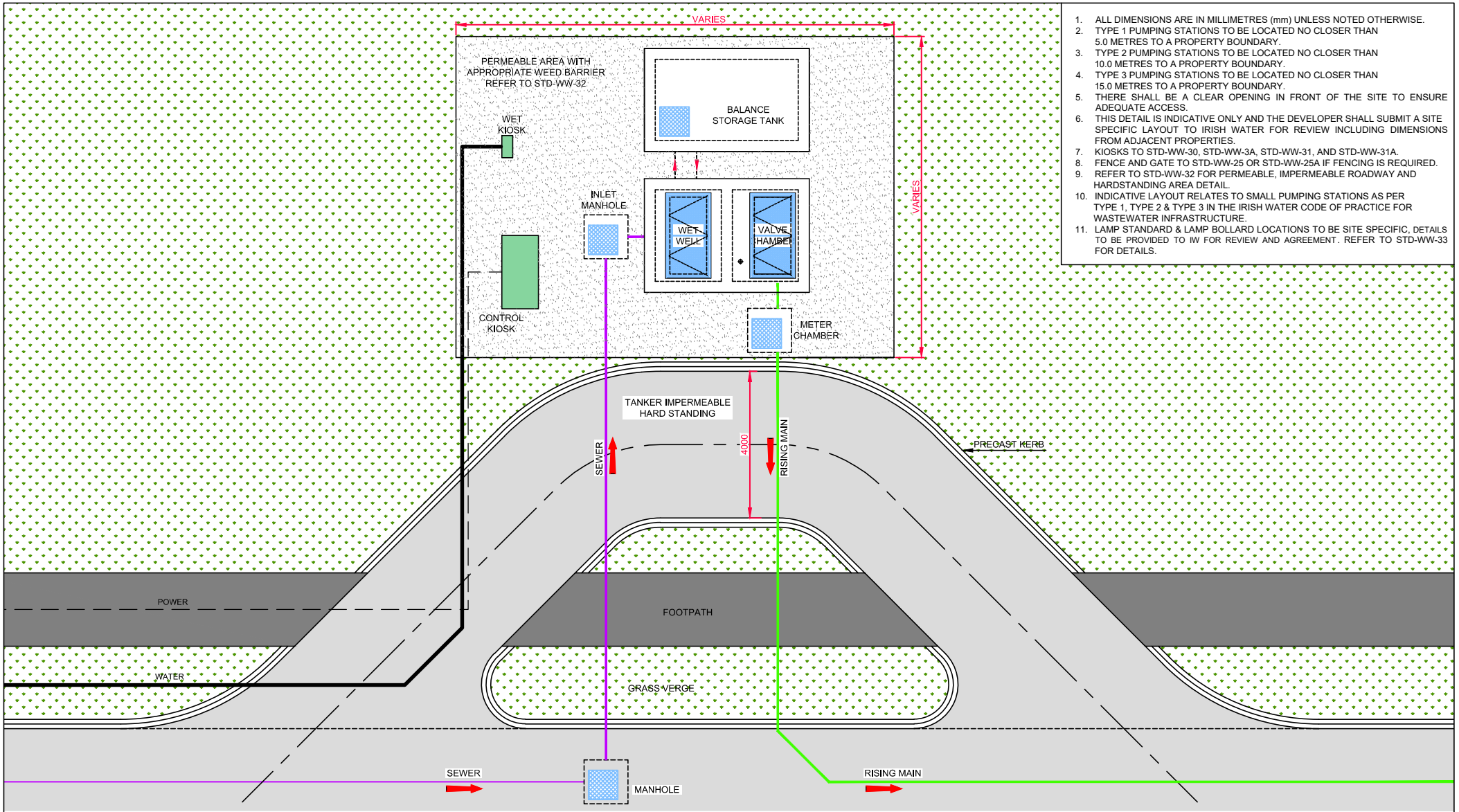
SECURITY RATING	MESH SPACING A x B	BAR THICKNESS	HEIGHT	ADDITIONAL FEATURES
BASIC +	200 x 50	Type: 868	2.4m	ANTI-CLIMB
ENHANCED	200 x 50	Type: 868	2.4m	ANTI-CLIMB
ENHANCED +	200 x 50	Type: 868	2.4m	ANTI-CLIMB & ANTI-BURROW



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

UISCE ÉIREANN : IRISH WATER						STANDARD DETAILS - WASTEWATER		SCALE	DATE
						TITLE		NOT TO SCALE	SEPT. 2015
						SECURITY GATE AND FENCING WIRE MESH OPTION		DRAWING No.	REV
								STD-WW-25A	3
No.	Date	Drn	Chk	Description	App				

3	07/20	RH	TOC	Infill mesh updated	MOD
2	11/17	JMC	TOC	Fencing table updated	MOD
1	08/16	JMC	TOC	Revised notes & table	MOD
0	09/15	JMC	TOC	Initial Issue	SL



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. TYPE 1 PUMPING STATIONS TO BE LOCATED NO CLOSER THAN 5.0 METRES TO A PROPERTY BOUNDARY.
3. TYPE 2 PUMPING STATIONS TO BE LOCATED NO CLOSER THAN 10.0 METRES TO A PROPERTY BOUNDARY.
4. TYPE 3 PUMPING STATIONS TO BE LOCATED NO CLOSER THAN 15.0 METRES TO A PROPERTY BOUNDARY.
5. THERE SHALL BE A CLEAR OPENING IN FRONT OF THE SITE TO ENSURE ADEQUATE ACCESS.
6. THIS DETAIL IS INDICATIVE ONLY AND THE DEVELOPER SHALL SUBMIT A SITE SPECIFIC LAYOUT TO IRISH WATER FOR REVIEW INCLUDING DIMENSIONS FROM ADJACENT PROPERTIES.
7. KIOSKS TO STD-WW-30, STD-WW-3A, STD-WW-31, AND STD-WW-31A.
8. FENCE AND GATE TO STD-WW-25 OR STD-WW-25A IF FENCING IS REQUIRED.
9. REFER TO STD-WW-32 FOR PERMEABLE, IMPERMEABLE ROADWAY AND HARDSTANDING AREA DETAIL.
10. INDICATIVE LAYOUT RELATES TO SMALL PUMPING STATIONS AS PER TYPE 1, TYPE 2 & TYPE 3 IN THE IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
11. LAMP STANDARD & LAMP BOLLARD LOCATIONS TO BE SITE SPECIFIC, DETAILS TO BE PROVIDED TO IW FOR REVIEW AND AGREEMENT. REFER TO STD-WW-33 FOR DETAILS.

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



No.	Date	Drm	Chk	Description	App
1	07/20	RH	TOC	Site Layout Modified	MOD
0	09/15	JMC	TOC	Initial Issue	SL

**STANDARD DETAILS - WASTEWATER**

TITLE

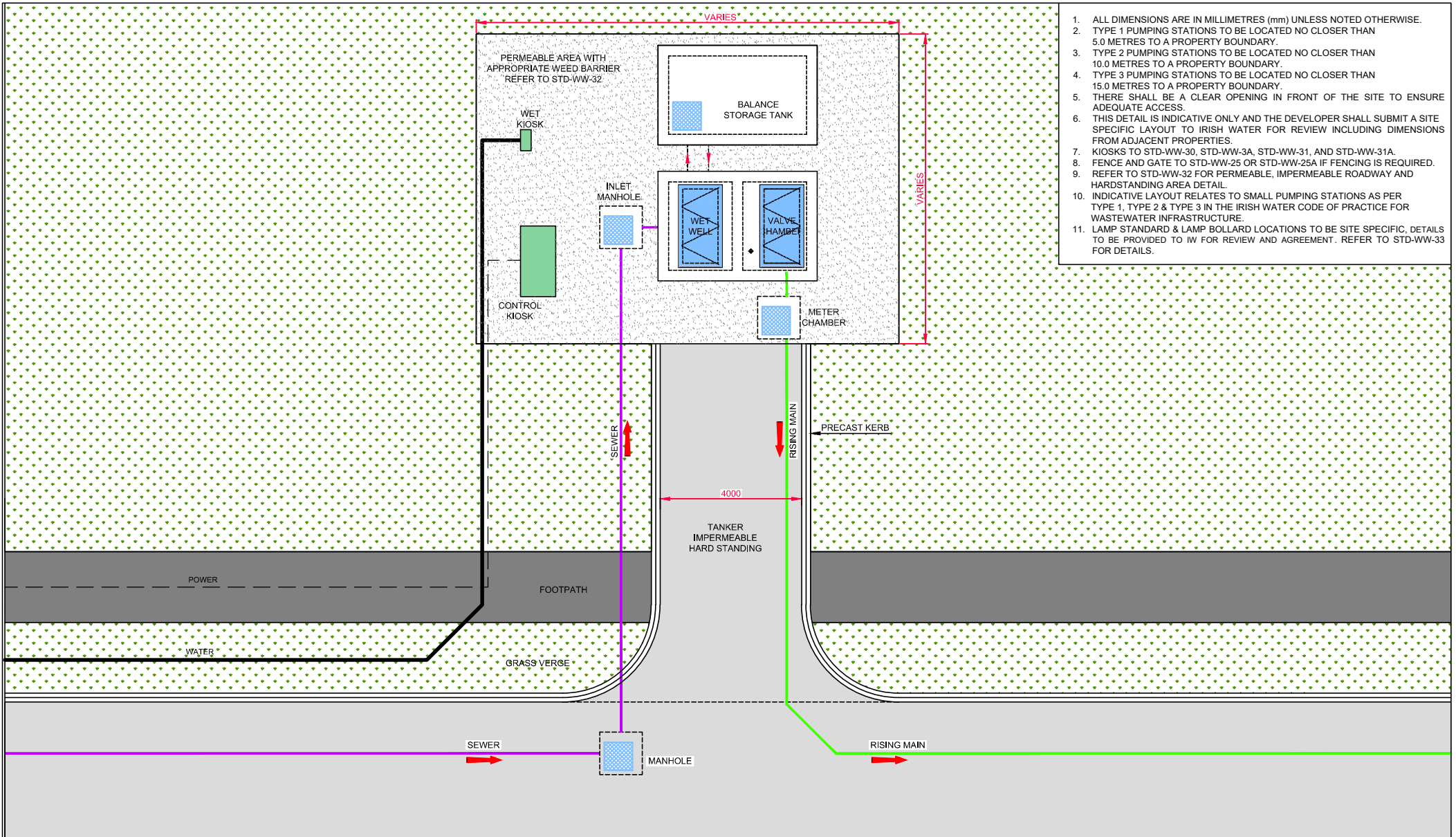
**INDICATIVE PUMPING STATION SITE LAYOUT  
ACCESS VIA LAY-BY**

SCALE  
NOT TO SCALE

DATE  
SEPT. 2015

DRAWING No.  
**STD-WW-26**

REV  
**1**



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. TYPE 1 PUMPING STATIONS TO BE LOCATED NO CLOSER THAN 5.0 METRES TO A PROPERTY BOUNDARY.
3. TYPE 2 PUMPING STATIONS TO BE LOCATED NO CLOSER THAN 10.0 METRES TO A PROPERTY BOUNDARY.
4. TYPE 3 PUMPING STATIONS TO BE LOCATED NO CLOSER THAN 15.0 METRES TO A PROPERTY BOUNDARY.
5. THERE SHALL BE A CLEAR OPENING IN FRONT OF THE SITE TO ENSURE ADEQUATE ACCESS.
6. THIS DETAIL IS INDICATIVE ONLY AND THE DEVELOPER SHALL SUBMIT A SITE SPECIFIC LAYOUT TO IRISH WATER FOR REVIEW INCLUDING DIMENSIONS FROM ADJACENT PROPERTIES.
7. KIOSKS TO STD-WW-30, STD-WW-3A, STD-WW-31, AND STD-WW-31A.
8. FENCE AND GATE TO STD-WW-25 OR STD-WW-25A IF FENCING IS REQUIRED.
9. REFER TO STD-WW-32 FOR PERMEABLE, IMPERMEABLE ROADWAY AND HARDSTANDING AREA DETAIL.
10. INDICATIVE LAYOUT RELATES TO SMALL PUMPING STATIONS AS PER TYPE 1, TYPE 2 & TYPE 3 IN THE IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
11. LAMP STANDARD & LAMP BOLLARD LOCATIONS TO BE SITE SPECIFIC, DETAILS TO BE PROVIDED TO IW FOR REVIEW AND AGREEMENT. REFER TO STD-WW-33 FOR DETAILS.

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



No.	Date	Dm	Chk	Description	App
0	07/20	RH	TOC	Initial Issue	MOD

**STANDARD DETAILS - WASTEWATER**

TITLE

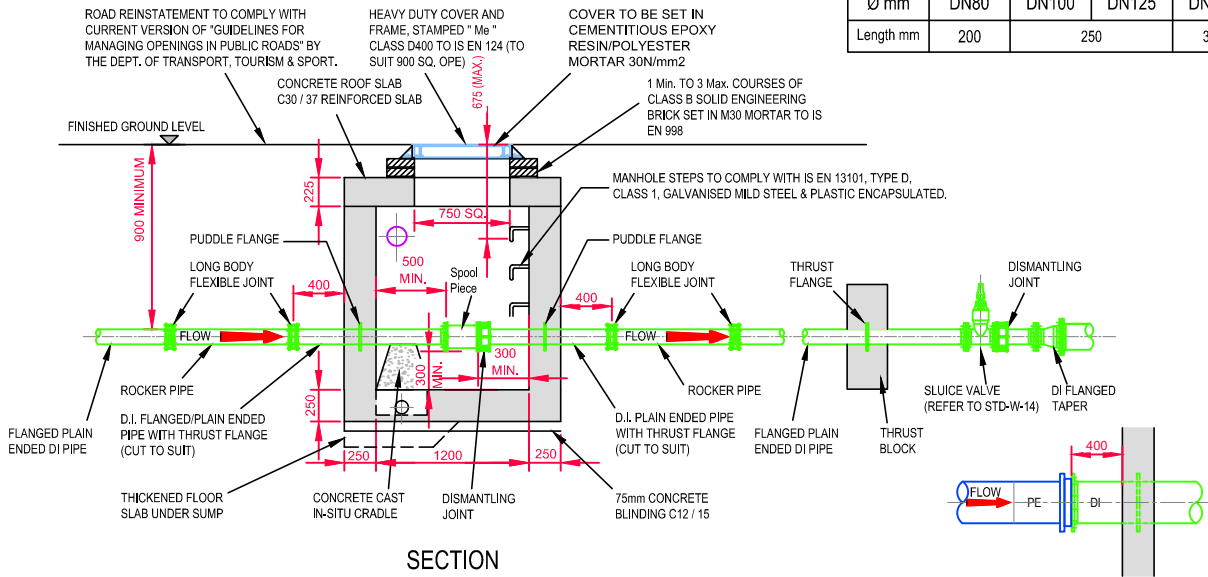
**INDICATIVE PUMPING STATION SITE LAYOUT  
DIRECT ACCESS FROM PUBLIC ROAD**

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. <b>STD-WW-26A</b>	REV <b>0</b>

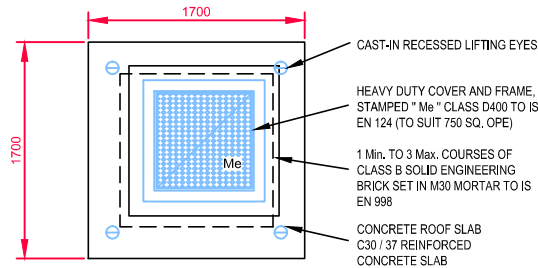
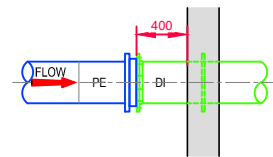
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS SHALL BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH IS420 & ISEN 1917.
3. METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
4. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
5. PRECAST UNITS COMPLETED WITH RUBBER SEALING GASKET BETWEEN UNITS, COMPLYING WITH THE REQUIREMENTS OF IS EN 1917 AND IS 420, COMPLETE WITH 150mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE. CONCRETE SURROUND TO BE GRADE C20/25 IN ACCORDANCE WITH IS EN 206. (REFER TO STD-WW-27B & STD-WW-27C) DEVELOPER SHALL PROVIDE DETAILS TO IRISH WATER FOR REVIEW.
6. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
7. ANTI CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
8. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
9. FLOW METERS REQUIRE A MINIMUM LENGTH OF PIPE ON EACH SIDE OF THE VALVE TO BE COMPLETELY FREE OF FITTINGS, VALVES, REDUCER ETC. AS PER THE MANUFACTURERS INSTRUCTIONS.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
11. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
12. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS. 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.
13. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.

FLOW METER SPOOL PIECE LENGTHS

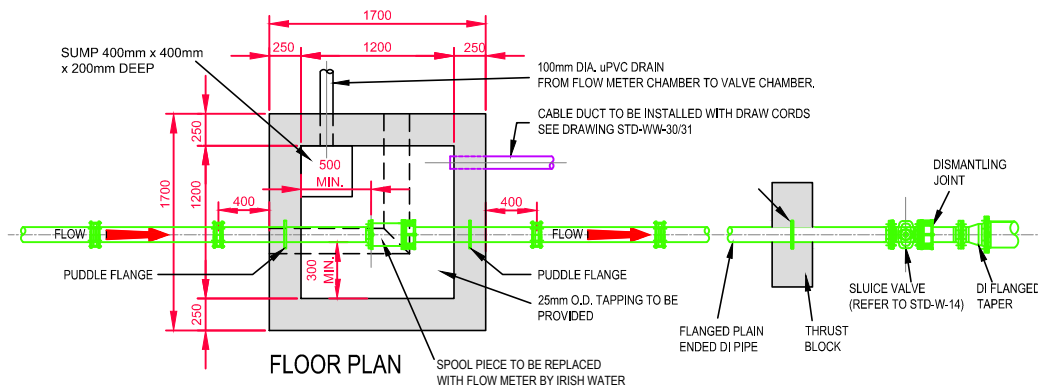
Ø mm	DN80	DN100	DN125	DN150	DN200
Length mm	200	250	300	350	



PE TO DI DETAIL



METER DIAMETER 'A' (mm)	INTERNAL CHAMBER DIMENSIONS	COVER DIMENSIONS
80 - 100	1200 x 1200	750 x 750
101 - 200	1500 x 1500	900 x 900



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



No.	Date	Dm	Chk	Description	App
3	07/20	RH	TOC	Revised & added notes	MOD
2	11/17	JMC	TOC	Revised & added notes	MOD
1	08/16	JMC	TOC	Added steps, revised cover notes & note 3	MOD
0	09/15	JMC	TOC	Initial Issue	SL

STANDARD DETAILS - WASTEWATER

TITLE

FLOW METER CHAMBER  
(FOUL RISING MAIN ≤200mm DIA.)  
CAST IN-SITU CONCRETE OPTION

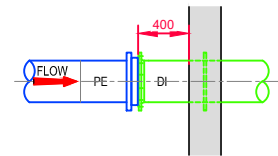
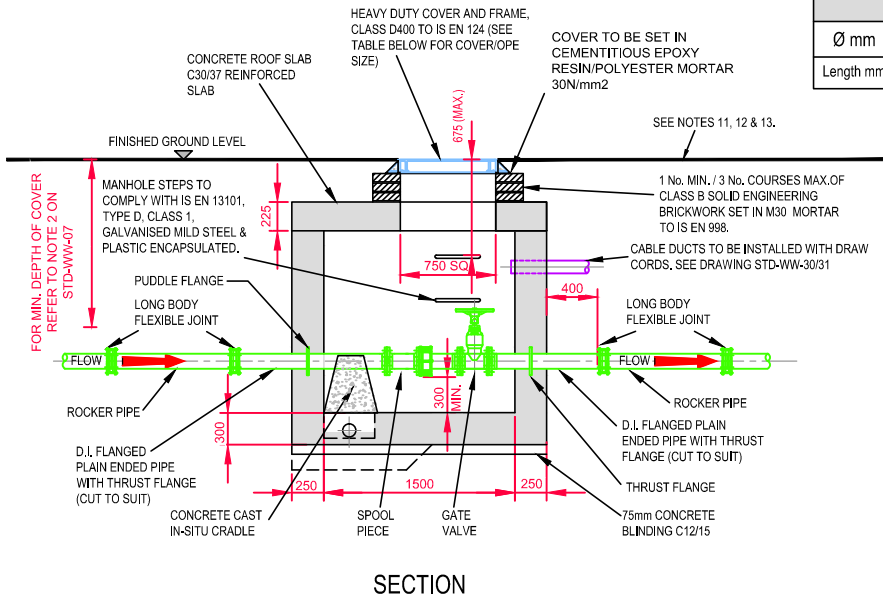
SCALE NOT TO SCALE DATE SEPT. 2015

DRAWING No. STD-WW-27 REV 3

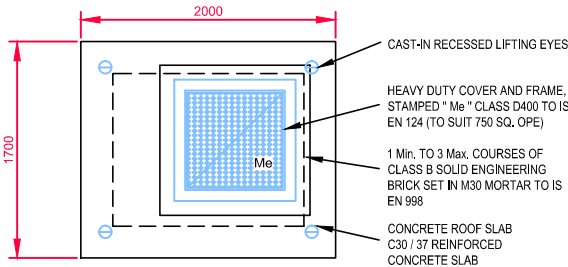


1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS SHALL BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, & COMPLIANCE WITH IS420 & ISEN 1917.
3. METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
4. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
5. PRECAST UNITS COMPLETED WITH RUBBER SEALING GASKET BETWEEN UNITS, COMPLYING WITH THE REQUIREMENTS OF IS EN 1917 AND IS 420, COMPLETE WITH 150mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE. CONCRETE SURROUND TO BE GRADE C20/25 IN ACCORDANCE WITH IS EN 206. (REFER TO STD-WW-27B & STD-WW-27C). DEVELOPER SHALL PROVIDE DETAILS TO IRISH WATER FOR REVIEW.
6. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
7. ANTI CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
8. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
9. FLOW METERS REQUIRE A MINIMUM LENGTH OF PIPE ON EACH SIDE OF THE VALVE TO BE COMPLETELY FREE OF FITTINGS, VALVES, REDUCER ETC. AS PER THE MANUFACTURERS INSTRUCTIONS.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
11. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
12. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS. 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.
13. 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.

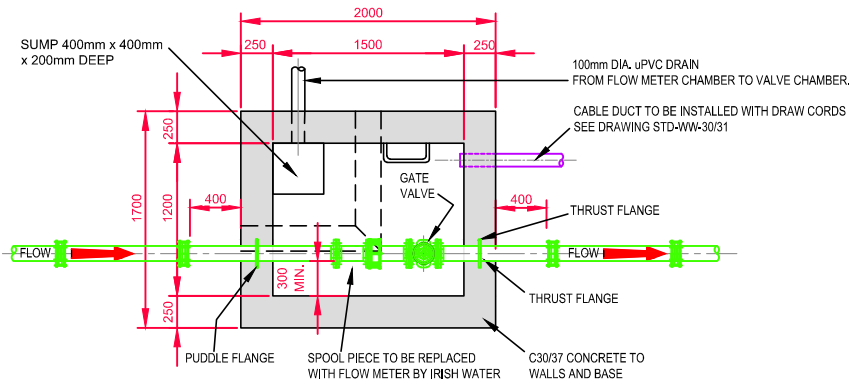
FLOW METER SPOOL PIECE LENGTHS					
Ø mm	DN80	DN100	DN125	DN150	DN200
Length mm	200	250	300	300	350



PE TO DI DETAIL



ROOF PLAN



FLOOR PLAN

METER DIAMETER 'A' (mm)	INTERNAL CHAMBER DIMENSIONS	COVER DIMENSIONS
80 - 100	1200 x 1500	750 x 750
101 - 200	1500 x 1500	900 x 900

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



0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Dm	Chk	Description	App

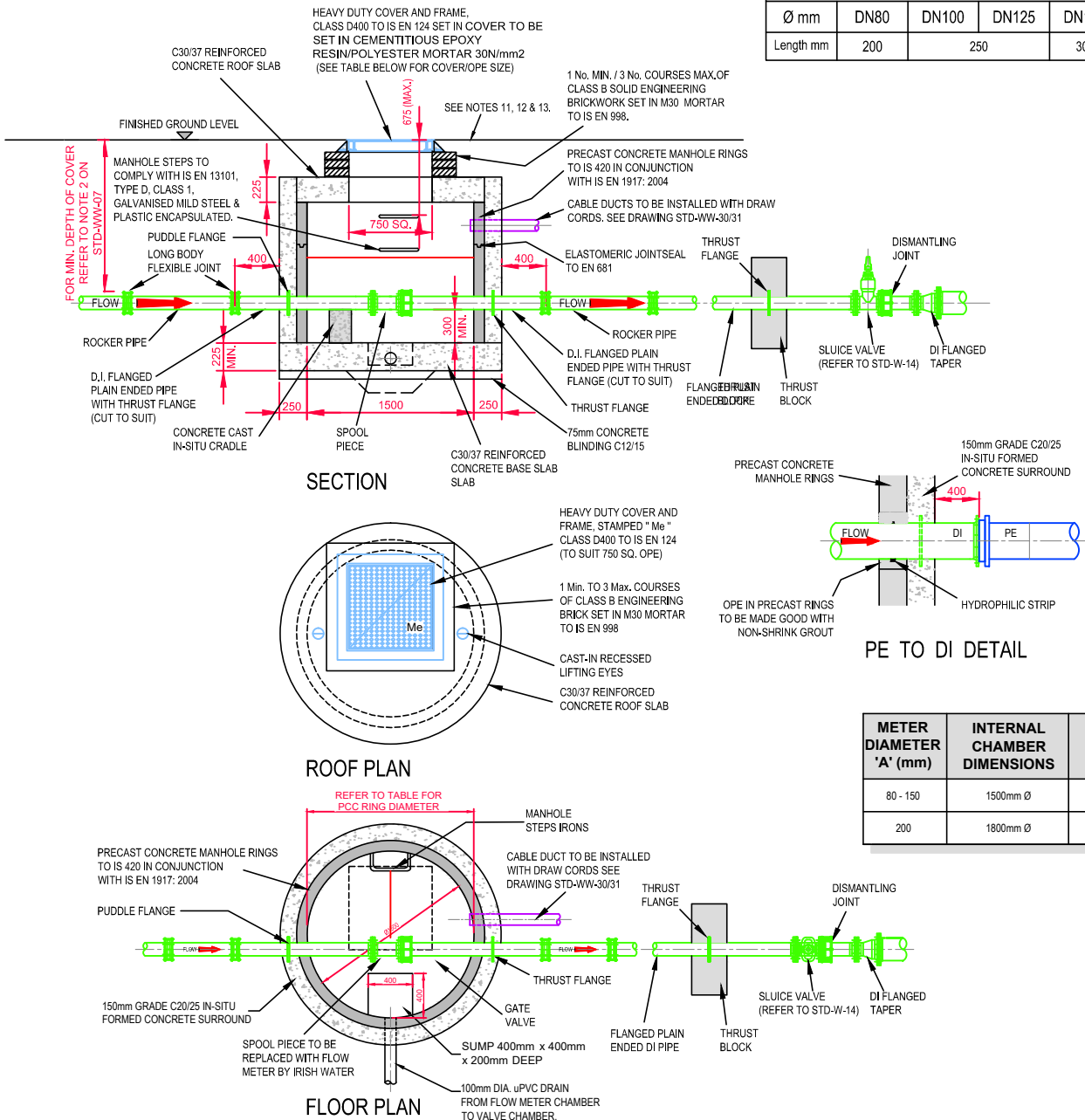
STANDARD DETAILS - WASTEWATER	
TITLE	FLOW METER & VALVE CHAMBER (FOUL RISING MAIN ≤200mm DIA.) CAST IN-SITU CONCRETE OPTION

SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
STD-WW-27A	0



- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- STRUCTURAL DESIGN AND REINFORCEMENT DETAILS SHALL BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW. DEVELOPER SHALL SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH IS420 & IS EN 1917 IN RESPECT ALL PRECAST UNITS.
- METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
- PRECAST UNITS COMPLETED WITH RUBBER SEALING GASKET BETWEEN UNITS, COMPLYING WITH THE REQUIREMENTS OF IS EN 1917 AND IS 420, COMPLETE WITH 150mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE. CONCRETE SURROUND TO BE GRADE C20/25 IN ACCORDANCE WITH IS EN 206.
- DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
- ANTI CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
- 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 REVIEW BY IRISH WATER.
- FLOW METERS REQUIRE A MINIMUM LENGTH OF PIPE ON EACH SIDE OF THE VALVE TO BE COMPLETELY FREE OF FITTINGS, VALVES, REDUCER ETC. AS PER THE MANUFACTURERS INSTRUCTIONS.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS. 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.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.

FLOW METER SPOOL PIECE LENGTHS					
Ø mm	DN80	DN100	DN125	DN150	DN200
Length mm	200	250		300	350



METER DIAMETER 'A' (mm)	INTERNAL CHAMBER DIMENSIONS	COVER DIMENSIONS
80 - 150	1500mm Ø	750 x 750
200	1800mm Ø	900 x 900

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



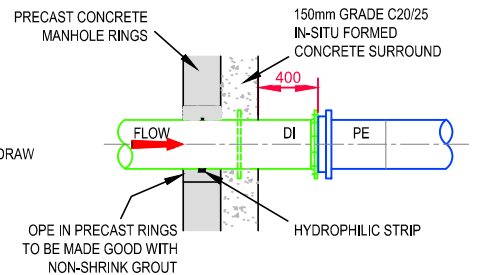
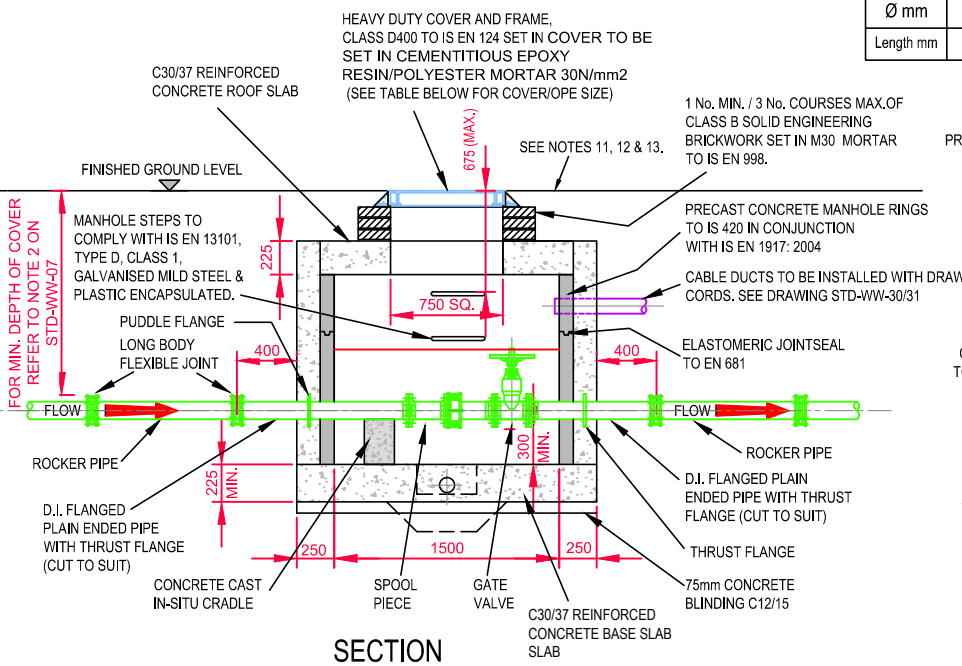
No.	Date	Drn	Chk	Description	App
0	07/20	RH	TOC	Initial Issue	MOD

STANDARD DETAILS - WASTEWATER	
TITLE	FLOW METER CHAMBER (FOUL RISING MAIN ≤200mm DIA.) PRECAST CONCRETE OPTION

SCALE	NOT TO SCALE	DATE	SEPT. 2015
DRAWING No.	STD-WW-27B	REV	0

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- STRUCTURAL DESIGN AND REINFORCEMENT DETAILS SHALL BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IRISH WATER REVIEW, DEVELOPER SHALL SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH IS420 & ISEN 1917 IN RESPECT ALL PRECAST UNITS.
- METER CHAMBER SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVER TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
- 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
- PRECAST UNITS COMPLETED WITH RUBBER SEALING GASKET BETWEEN UNITS, COMPLYING WITH THE REQUIREMENTS OF IS EN 1917 AND IS 420, COMPLETE WITH 150mm CONCRETE SURROUND MAY BE USED AS AN ACCEPTABLE ALTERNATIVE. CONCRETE SURROUND TO BE GRADE C20/25 IN ACCORDANCE WITH IS EN 206.
- DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598. PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
- ANTI CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
- ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
- FLOW METERS REQUIRE A MINIMUM LENGTH OF PIPE ON EACH SIDE OF THE VALVE TO BE COMPLETELY FREE OF FITTINGS, VALVES, REDUCER ETC. AS PER THE MANUFACTURERS INSTRUCTIONS.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
- ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
- NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS. 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.
- 200mm ALL AROUND x 100mm DEEP, C20/25 CONCRETE PLINTH COMPLETE WITH BULL NOSE FINISH AND MILD STEEL REINFORCEMENT LINK AROUND COVERS IN GREEN AREAS.

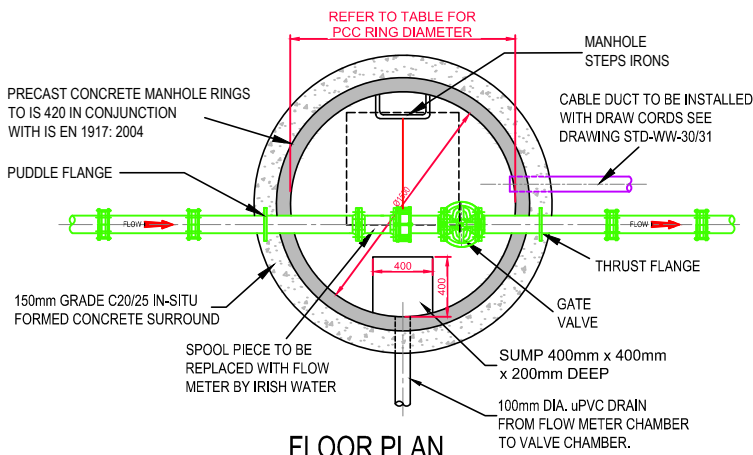
FLOW METER SPOOL PIECE LENGTHS					
Ø mm	DN80	DN100	DN125	DN150	DN200
Length mm	200	250	300	300	350



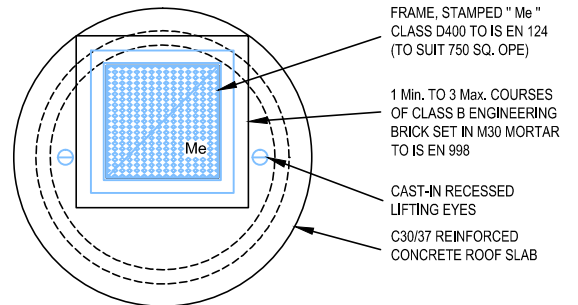
PE TO DI DETAIL

METER DIAMETER 'A' (mm)	INTERNAL CHAMBER DIAMETER	COVER DIMENSIONS
80-150	1500mm Ø	750 x 750
200	1800mm Ø	900 x 900

SECTION



FLOOR PLAN



ROOF PLAN

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

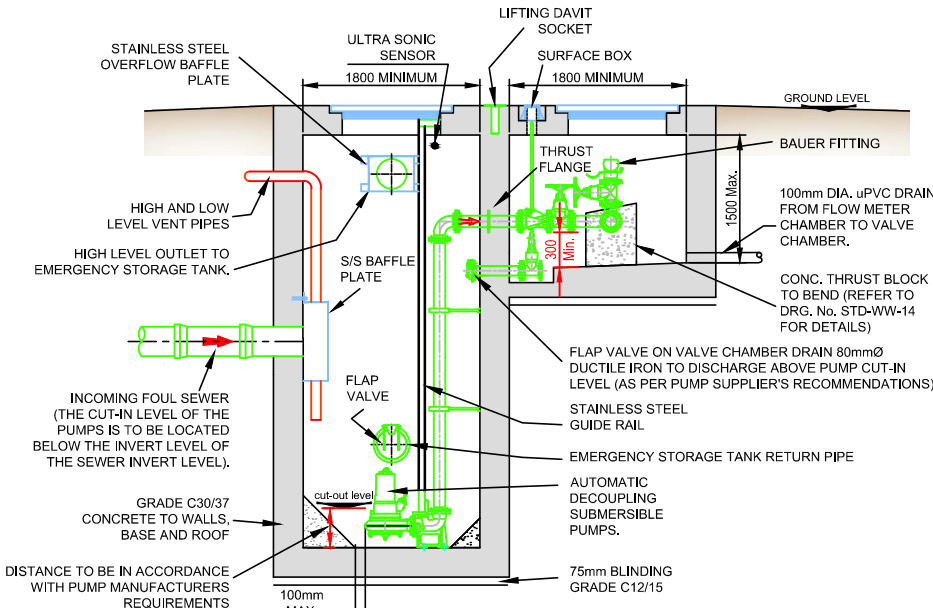


No.	Date	Drn	Chk	Description	App
0	07/20	RH	TOC	Initial Issue	MOD

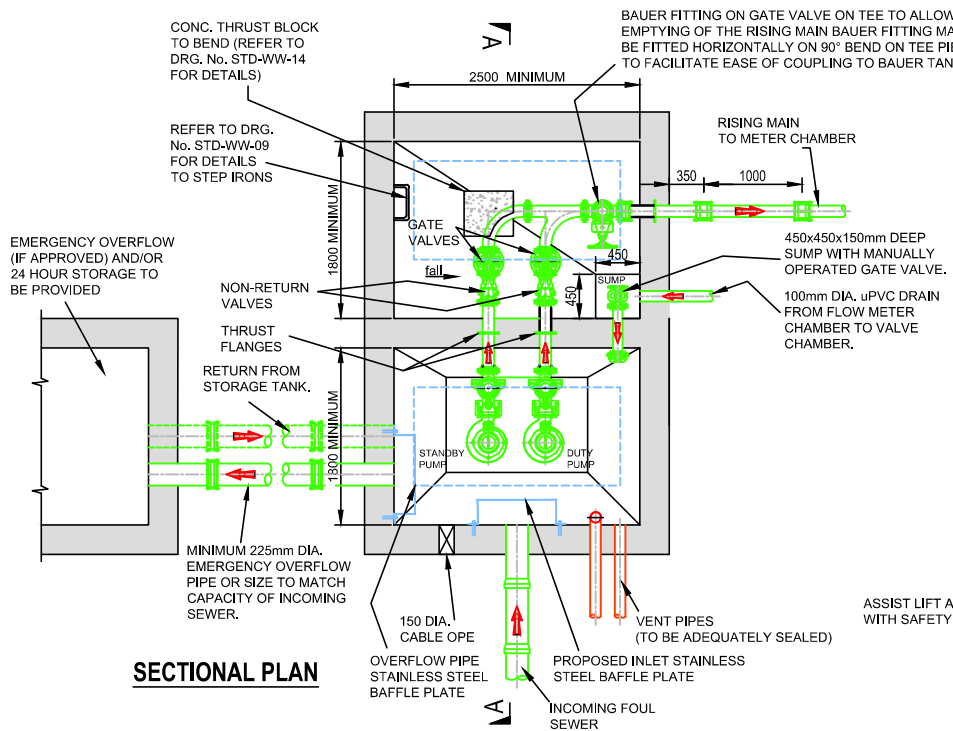
<b>STANDARD DETAILS - WASTEWATER</b>	
TITLE	
FLOW METER & VALVE CHAMBER (FOUL RISING MAIN ≤200mm DIA.) PRECAST CONCRETE OPTION	

SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
STD-WW-27C	0

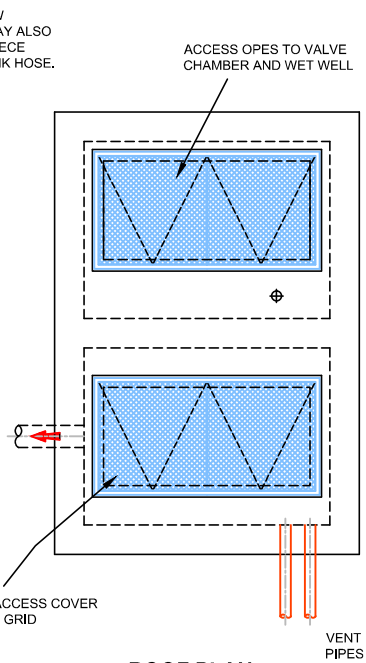
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PUMPS SHALL BE INSTALLED TO IRISH WATER REQUIREMENTS. REFER TO PART 5 OF THE CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE .
3. ALL DUCTILE IRON PIPE WORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
4. PRE-CAST CONCRETE CHAMBERS MAY BE USED SUBJECT TO REVIEW BY IRISH WATER. REFER TO DRG. No. WW-28A FOR DETAILS.
5. ALL GATE VALVES TO BE CLOCKWISE CLOSING.
6. WET WELL TO BE IN ACCORDANCE WITH BS EN 1992-3. EUROCODE 2 - DESIGN OF CONCRETE STRUCTURES - PART 3: LIQUID RETAINING AND CONTAINMENT STRUCTURES, TIGHTNESS CLASS 2
7. COVERS TO BE SIZED TO ALLOW ADEQUATE SPACE FOR PUMP REMOVAL MINIMUM 1400 x 800mm.
8. CHAMBER ACCESS COVERS WITH A CLEAR OPENING EXCEEDING 1m SHALL CONFORM TO BS 9124.
9. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS SHALL BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IW FOR REVIEW. WALL THICKNESS AND REINFORCEMENT SHALL BE SELECTED BASED ON SITE SPECIFIC DESIGN. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS & DEAD LOADS, & CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225mm.
10. THE PUMPING STATION SHOULD NOT BE LOCATED IN AREAS THAT ARE SUSCEPTIBLE TO FLOODING AT MORE THAN A 1:30 YEAR RECURRENCE. THE PUMPING STATION FACILITY SHALL BE DESIGNED FOR INUNDATION. THE FINISHED SLAB LEVEL SHALL BE POSITIONED ABOVE THE 1:100 YEAR FLOOD LEVEL. ALL ELECTRICAL CONTROL EQUIPMENT SHALL BE IP RATED AND POSITIONED ABOVE 1:200 YEAR FLOOD LEVEL.
11. 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 REVIEW BY IRISH WATER. DEVELOPER SHALL SUBMIT SITE SPECIFIC ANTI-FLOATION CALCULATIONS AND MEASURES PROPOSED IN RESPECT OF PUMP STATION STRUCTURES, AND TO TAKE INTO ACCOUNT CONDITIONS DURING ON-SITE TESTING OF STRUCTURES
12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
13. THIS DRAWING IS INDICATIVE ONLY AND THE DEVELOPER SHALL SUBMIT A SITE SPECIFIC LAYOUT TO IRISH WATER FOR REVIEW.
14. VENTILATION STACK TO BE PROVIDED IN SENSITIVE AREAS.
15. EMERGENCY WASTEWATER BALANCE STORAGE CAPACITY SHALL BE PROVIDED AT THE PUMP STATION IN ACCORDANCE WITH CLAUSE 5.11 OF THE CODE OF PRACTICE.
16. EMERGENCY OVERFLOW SHALL ONLY BE PROVIDED SUBJECT TO APPROVAL FROM THE RELEVANT REGULATORY AUTHORITIES. THE DEVELOPER SHALL PROVIDE THE REQUISITE CONSENTS FROM THE RELEVANT AUTHORITIES IN THE DESIGN SUBMISSION
17. SURGE EQUIPMENT TO BE PROVIDED IF DEEMED NECESSARY.
18. INDICATIVE LAYOUT RELATES TO SMALL PUMPING STATIONS AS PER TYPE 1, TYPE 2 & TYPE 3 IN THE IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.



**SECTION A-A**



**SECTIONAL PLAN**

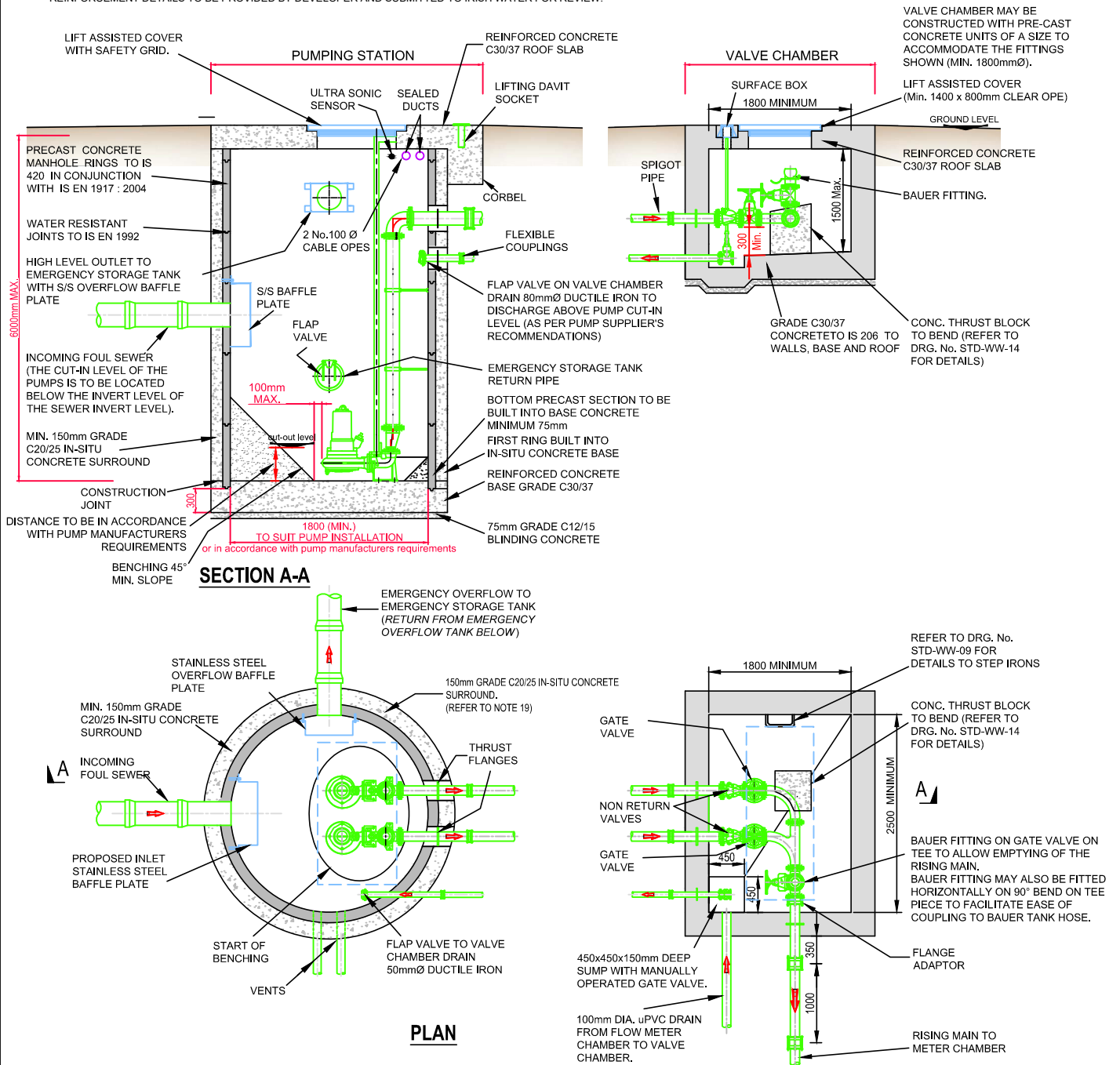


**ROOF PLAN**

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

						<b>STANDARD DETAILS - WASTEWATER</b>		SCALE NOT TO SCALE	DATE SEPT. 2015
	3	07/20	RH	TOC	Pumping Station layout modified	MOD	TITLE	DRAWING No.	REV
	2	11/17	JMC	TOC	Revised notes 2,4,9 & 11	MOD	<b>CAST IN-SITU INDICATIVE SUBMERSIBLE PUMPING STATION</b>	<b>STD-WW-28</b>	<b>3</b>
	1	08/16	JMC	TOC	Revised note 4, incoming sewer note & added thrust block & step irons to valve chamber	MOD			
	0	09/15	JMC	TOC	Initial Issue	SL			
No.	Date	Drm	Chk	Description	App				

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PUMPS SHALL BE INSTALLED TO IRISH WATER REQUIREMENTS. REFER TO PART 5 OF THE CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
3. ALL DUCTILE IRON PIPE WORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
4. PRE-CAST CONCRETE CHAMBERS MAY BE USED SUBJECT TO REVIEW BY IRISH WATER.
5. ALL GATE VALVES TO BE CLOCKWISE CLOSING.
6. THE COMPOSITE WET WELL STRUCTURE COMPRISING PRECAST CONCRETE MANHOLE UNITS AND STRUCTURAL CONCRETE SURROUND SHALL BE DESIGNED IN ACCORDANCE WITH IS EN 1992-3 - EUROCODE 2 - DESIGN OF CONCRETE STRUCTURES - PART 3: LIQUID RETAINING AND CONTAINMENT STRUCTURES TIGHTNESS CLASS 2
7. COVERS TO BE SIZED TO ALLOW ADEQUATE SPACE FOR PUMP REMOVAL MINIMUM 1400 x 800mm.
8. CHAMBER ACCESS COVERS WITH A CLEAR OPENING EXCEEDING 1m SHALL CONFORM TO BS 9124.
9. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS AND DEAD LOADS, CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225MM. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS SHALL BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IW FOR REVIEW, ALTERNATIVELY PRE-CAST CONCRETE ROOFS IN COMPLIANCE WITH IS 420 MAY BE USED SUBJECT TO IW REVIEW
10. THE PUMPING STATION SHOULD NOT BE LOCATED IN AREAS THAT ARE SUSCEPTIBLE TO FLOODING AT MORE THAN A 1:30 YEAR RECURRENCE. THE PUMPING STATION FACILITY SHALL BE DESIGNED FOR INUNDATION. THE FINISHED SLAB LEVEL SHALL BE POSITIONED ABOVE THE 1:100 YEAR FLOOD LEVEL. ALL ELECTRICAL CONTROL EQUIPMENT SHALL BE IP RATED AND POSITIONED ABOVE 1:200 YEAR FLOOD LEVEL. THE DEVELOPER SHALL SUBMIT NECESSARY FLOOD RISK DOCUMENTATION IN RESPECT OF THESE ISSUES.
11. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER. THE DEVELOPER SHALL SUBMIT SITE SPECIFIC ANTI-FLOATATION CALCULATIONS AND MEASURES PROPOSED IN RESPECT OF PUMP STATION STRUCTURES, AND TO TAKE INTO ACCOUNT CONDITIONS DURING ON-SITE TESTING OF STRUCTURES
12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
13. THIS DRAWING IS INDICATIVE ONLY AND THE DEVELOPER SHALL SUBMIT A SITE SPECIFIC LAYOUT TO IRISH WATER FOR REVIEW.
14. VENTILATION STACK TO BE PROVIDED IN SENSITIVE AREAS.
15. EMERGENCY WASTEWATER BALANCE STORAGE CAPACITY SHALL BE PROVIDED AT THE PUMP STATION IN ACCORDANCE WITH CLAUSE 5.11 OF THE CODE OF PRACTICE.
16. EMERGENCY OVERFLOW SHALL ONLY BE PROVIDED SUBJECT TO APPROVAL FROM THE RELEVANT REGULATORY AUTHORITIES, THE DEVELOPER SHALL PROVIDE THE REQUISITE CONSENTS FROM THE RELEVANT AUTHORITIES IN THE DESIGN SUBMISSION.
17. SURGE EQUIPMENT TO BE PROVIDED IF DEEMED NECESSARY.
18. INDICATIVE LAYOUT RELATES TO SMALL PUMPING STATIONS AS PER TYPE 1, TYPE 2 & TYPE 3 IN THE IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
19. PROPRIETARY WATERTIGHT PRE-CAST CONCRETE SYSTEMS IN ACCORDANCE WITH IS EN 1992-3 TIGHTNESS CLASS 2, MAY BE USED SUBJECT TO IW APPROVAL AS AN ALTERNATIVE. DEVELOPER SHALL PROVIDE DETAILS TO IRISH WATER FOR REVIEW. CONCRETE SURROUND, C30/35 CONCRETE TO IS 206, SHALL BE PROVIDED TO ANY JOINTS WITHIN THE PRECAST CONCRETE UNIT.
20. IN-SITU CONCRETE SURROUND TO PCC MANHOLE UNITS TO BE INCREASED IN THICKNESS FOR PUMPING STATIONS >3.0m DEEP TO DESIGNERS REQUIREMENTS. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.

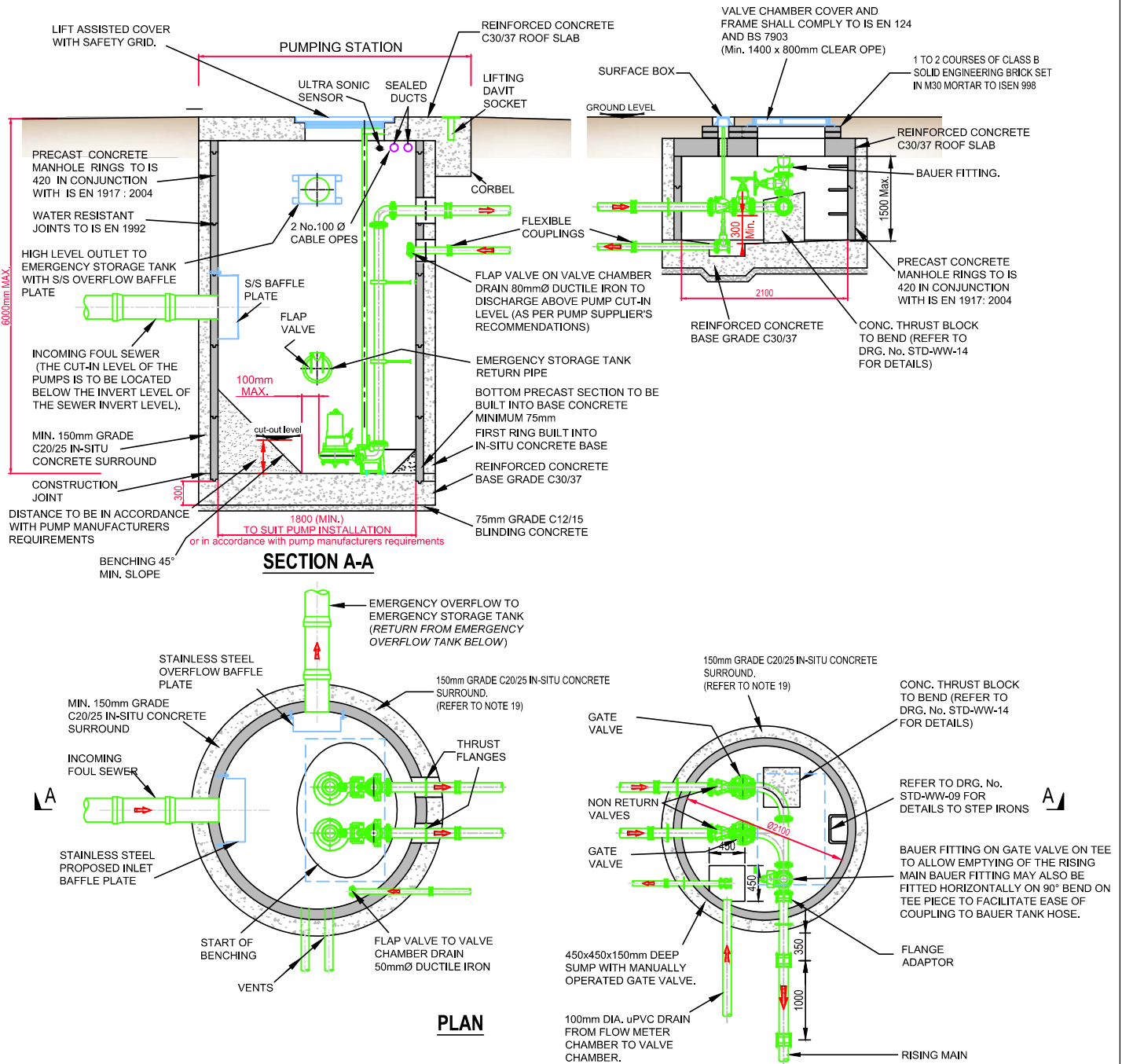


No.	Date	Drn	Chk	Description	App
2	07/20	RH	TOC	Valve chamber modified, lifting davit removed, title updated	MOD
1	11/17	JMC	TOC	Revised notes 2,4,9 & 11	MOD
0	08/16	JMC	TOC	Initial Issue	MOD

STANDARD DETAILS - WASTEWATER		SCALE	DATE
TITLE		NOT TO SCALE	JUL. 2016
		INDICATIVE PRE-CAST CONCRETE SUBMERSIBLE PUMPING STATION WITH CAST IN-SITU VALVE CHAMBER	
DRAWING No.		REV	
STD-WW-28A		2	



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PUMPS SHALL BE INSTALLED TO IRISH WATER REQUIREMENTS. REFER TO PART 5 OF THE CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
3. ALL DUCTILE IRON PIPE WORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
4. PRE-CAST CONCRETE CHAMBERS MAY BE USED SUBJECT TO REVIEW BY IRISH WATER.
5. ALL GATE VALVES TO BE CLOCKWISE CLOSING.
6. THE COMPOSITE WET WELL STRUCTURE COMPRISING PRECAST CONCRETE MANHOLE UNITS AND STRUCTURAL CONCRETE SURROUND SHALL BE DESIGNED IN ACCORDANCE WITH IS EN 1992-3 - EUROCODE 2 - DESIGN OF CONCRETE STRUCTURES - PART 3: LIQUID RETAINING AND CONTAINMENT STRUCTURES TIGHTNESS CLASS 2
7. COVERS TO BE SIZED TO ALLOW ADEQUATE SPACE FOR PUMP REMOVAL. MINIMUM 1400 x 800mm.
8. CHAMBER ACCESS COVERS WITH A CLEAR OPENING EXCEEDING 1m SHALL CONFORM TO BS 9124.
9. ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE LOADS AND DEAD LOADS, CONSIST OF A REINFORCED CONCRETE SLAB OF IN-SITU CONCRETE, GRADE C30/37, WITH A MINIMUM THICKNESS OF 225MM. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS SHALL BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IW FOR REVIEW, ALTERNATIVELY PRE-CAST CONCRETE ROOFS IN COMPLIANCE WITH IS 420 MAY BE USED SUBJECT TO IW REVIEW
10. THE PUMPING STATION SHOULD NOT BE LOCATED IN AREAS THAT ARE SUSCEPTIBLE TO FLOODING AT MORE THAN A 1:30 YEAR RECURRENCE. THE PUMPING STATION FACILITY SHALL BE DESIGNED FOR INUNDATION. THE FINISHED SLAB LEVEL SHALL BE POSITIONED ABOVE THE 1:100 YEAR FLOOD LEVEL. ALL ELECTRICAL CONTROL EQUIPMENT SHALL BE IP RATED AND POSITIONED ABOVE 1:200 YEAR FLOOD LEVEL. THE DEVELOPER SHALL SUBMIT NECESSARY FLOOD RISK DOCUMENTATION IN RESPECT OF THESE ISSUES.
11. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER. THE DEVELOPER SHALL SUBMIT SITE SPECIFIC ANTI-FLOATATION CALCULATIONS AND MEASURES PROPOSED IN RESPECT OF PUMP STATION STRUCTURES, AND TO TAKE INTO ACCOUNT CONDITIONS DURING ON-SITE TESTING OF STRUCTURES
12. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
13. THIS DRAWING IS INDICATIVE ONLY AND THE DEVELOPER SHALL SUBMIT A SITE SPECIFIC LAYOUT TO IRISH WATER FOR REVIEW.
14. VENTILATION STACK TO BE PROVIDED IN SENSITIVE AREAS.
15. EMERGENCY WASTEWATER BALANCE STORAGE CAPACITY SHALL BE PROVIDED AT THE PUMP STATION IN ACCORDANCE WITH CLAUSE 5.11 OF THE CODE OF PRACTICE.
16. EMERGENCY OVERFLOW SHALL ONLY BE PROVIDED SUBJECT TO APPROVAL FROM THE RELEVANT REGULATORY AUTHORITIES, THE DEVELOPER SHALL PROVIDE THE REQUISITE CONSENTS FROM THE RELEVANT AUTHORITIES IN THE DESIGN SUBMISSION.
17. SURGE EQUIPMENT TO BE PROVIDED IF DEEMED NECESSARY.
18. INDICATIVE LAYOUT RELATES TO SMALL PUMPING STATIONS AS PER TYPE 1, TYPE 2 & TYPE 3 IN THE IRISH WATER CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE.
19. PROPRIETARY WATERTIGHT PRE-CAST CONCRETE SYSTEMS IN ACCORDANCE WITH IS EN 1992-3 TIGHTNESS CLASS 2, MAY BE USED SUBJECT TO IW APPROVAL AS AN ALTERNATIVE. DEVELOPER SHALL PROVIDE DETAILS TO IRISH WATER FOR REVIEW. CONCRETE SURROUND, C30/35 CONCRETE TO IS 206, SHALL BE PROVIDED TO ANY JOINTS WITHIN THE PRECAST CONCRETE UNIT.
20. IN-SITU CONCRETE SURROUND TO PCC MANHOLE UNITS TO BE INCREASED IN THICKNESS FOR PUMPING STATIONS >3.0m DEEP TO DESIGNERS REQUIREMENTS. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.



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

STANDARD DETAILS - WASTEWATER

SCALE: NOT TO SCALE  
DATE: JUL. 2016

TITLE: INDICATIVE PRE-CAST CONCRETE SUBMERSIBLE PUMPING STATION AND PRECAST VALVE CHAMBER

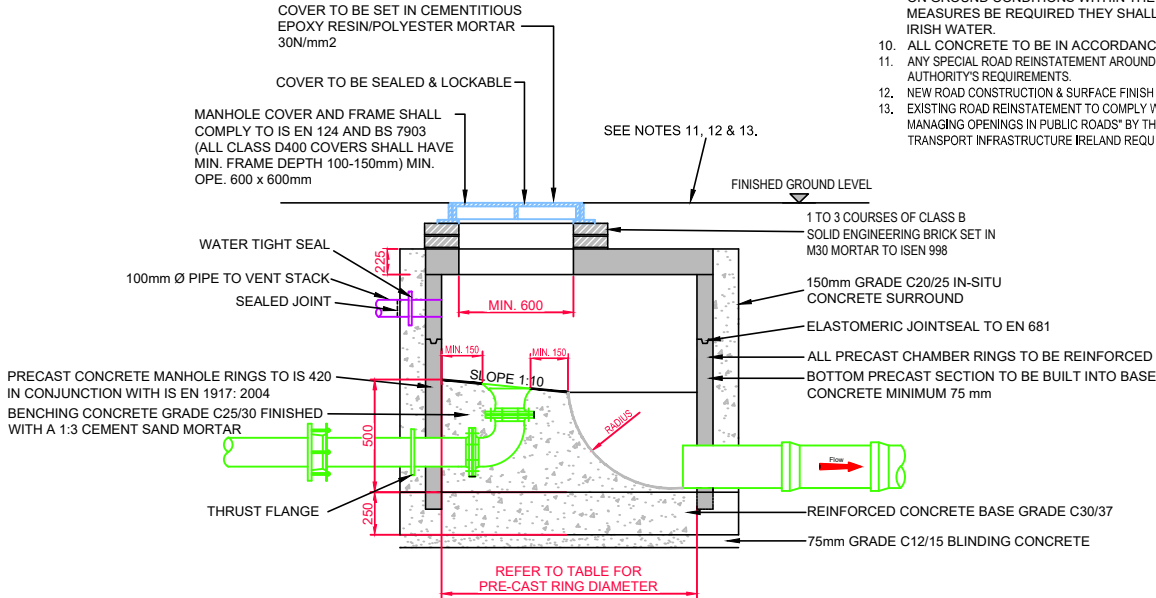
DRAWING No.: STD-WW-28B  
REV: 0



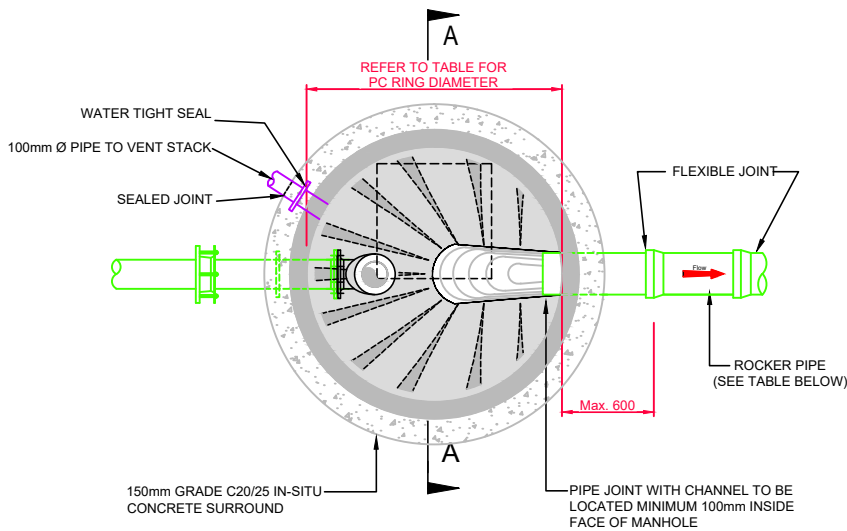
No.	Date	Drn	Chk	Description	App
0	07/20	RH	TOC	Initial Issue	MOD



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE.
4. CAST IN-SITU CONCRETE BASE, GRADE C30/35 CONCRETE TO IS EN 206 INCORPORATING CHANNEL BENCHING ETC.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
6. MANHOLE ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE AND DEAD LOADS, AND CONSIST OF C30/35 CONCRETE, TO IE EN 206, WITH A MINIMUM THICKNESS OF 225MM. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IW REVIEW. DEVELOPER SHALL SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH IS420 & ISEN 1917 IN RESPECT ALL PRECAST UNITS
7. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
8. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
9. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
11. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
12. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
13. 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.



**SECTION A-A**



**PLAN**

MINIMUM MANHOLE DIAMETERS	
DIAMETER OF LARGEST PIPE IN MANHOLE (mm)	INTERNAL DIAMETER OF MANHOLE (mm)
LESS THAN 150	1500

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

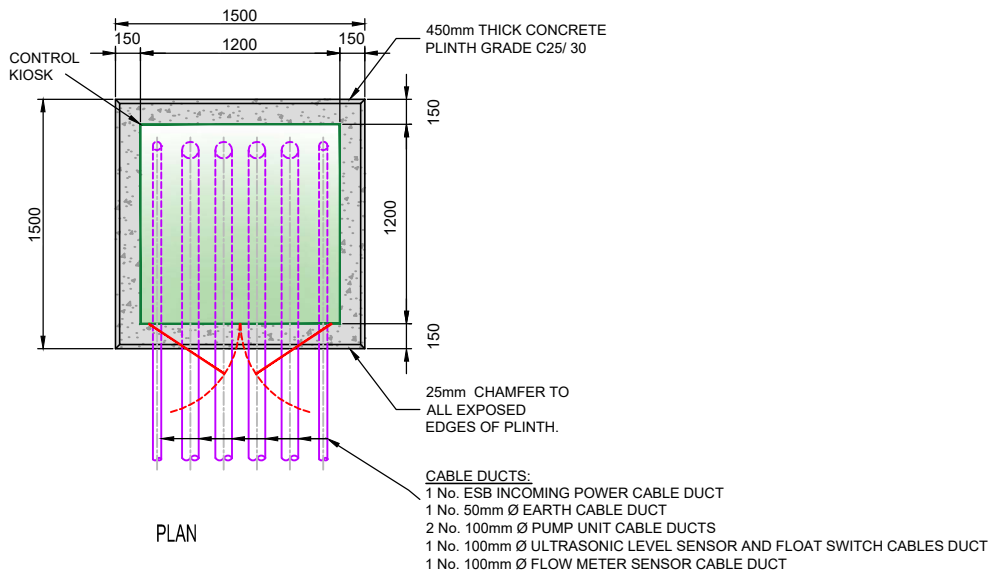
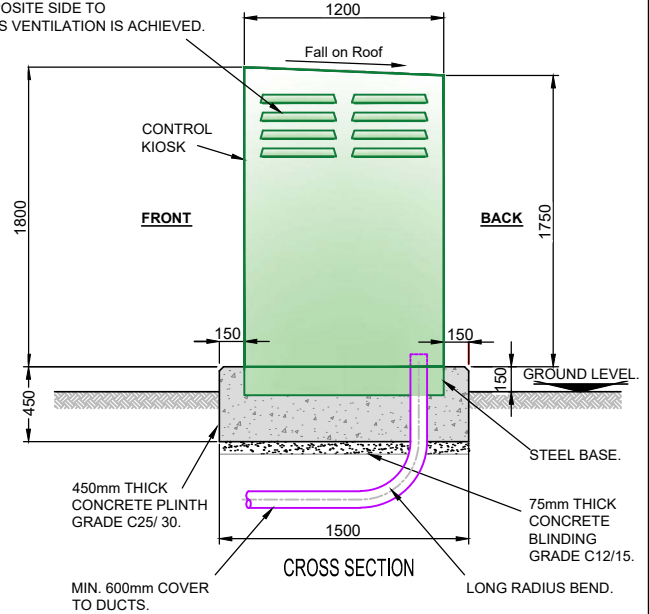
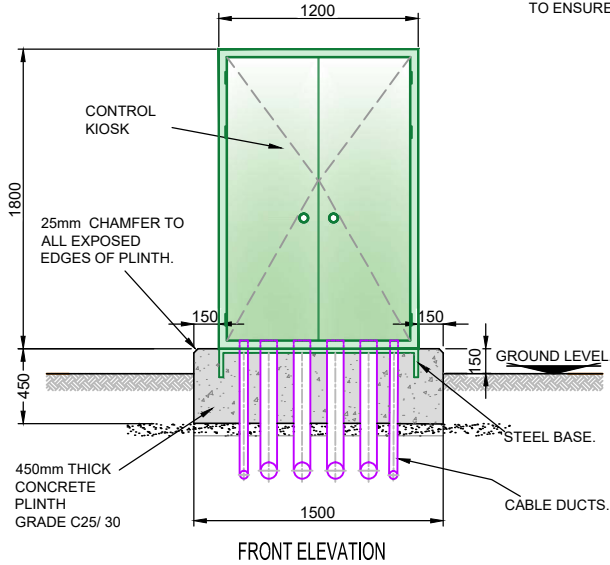
\* SEWERS GREATER THAN 450mm Ø ARE OUTSIDE THE SCOPE OF THE STANDARD DETAILS. LARGER MANHOLE SIZE OF THESE CHAMBERS MAY BE REQUIRED DUE TO MULTIPLE PIPES WITHIN MANHOLE.

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

	3	07/20	RH	TOC	Benching Shown on Plan, brickwork bedding spec, updated	MOD	<b>STANDARD DETAILS - WASTEWATER</b>	SCALE	DATE	
	2	11/17	JMC	TOC	Added rocker pipe table, added & updated notes.	MOD		TITLE	NOT TO SCALE	SEPT. 2015
	1	08/16	JMC	TOC	Revised cover note & access ope dim.	MOD		<b>RISING MAIN DISCHARGE STAND OFF MANHOLE</b>	DRAWING No.	REV
	0	09/15	JMC	TOC	Initial Issue	SL			STD-WW-29	3
	No.	Date	Drn	Chk	Description	App				

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. KIOSKS TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED MILD STEEL PLATE (MINIMUM 3mm THICKNESS) TO BS EN 1461. STAINLESS STEEL MAY BE USED AS AN ALTERNATIVE KIOSK MATERIAL, PARTICULARLY IN SEVERE ENVIRONMENTS, SUBJECT TO AGREEMENT WITH IRISH WATER.
3. COLOUR TO BE HOLLY GREEN BS 4800 14 C39. INTERIOR FINISH TO BE WHITE UNLESS APPROVED BY IRISH WATER.
4. THE QUALITY OF KIOSK CONSTRUCTION SHALL ENSURE THAT THE FOLLOWING IS ACHIEVED:
  - A) A THERMAL TRANSMITTANCE OF 1.5W PER m<sup>2</sup>K
  - B) A FIRE RESISTANCE (RETENTION OF STABILITY, INTEGRITY AND INSULATION) EQUIVALENT TO CLASS 2 OF BS 476, WHEN TESTED IN ACCORDANCE WITH BS 476 FOR A PERIOD EXCEEDING 30 MINUTES.
  - C) AN IP RATING OF IP55 OR EQUIVALENT.
5. KIOSK TO HAVE SINGLE OR DOUBLE STEEL/GRP DOORS WITH MULTIPLE LOCKS TO LPS 1175 SR3 OR EN 1627. MINIMUM DOUBLE LOCKS WITH BOLTS THAT ENGAGE INTO THE SILL & HEADER AS WELL AS BETWEEN THE TWO LEAVES OR LEAF & FRAME. LEADING EDGE OF LEAVES TO HAVE EITHER REBATED EDGES OR FITTED WITH ASTRAGALS.
6. KIOSK TO BE BOLTED TO THE PLINTH THROUGH A BOTTOM FLANGE WITH GALVANISED MILD STEEL OR STAINLESS STEEL ANCHOR BOLTS.
7. THE BOTTOM FLANGE SHALL BE SEATED ON A NEOPRENE GASKET AND SEALED WITH MASTIC.
8. REAR WALL SHALL BE REINFORCED WITH STAINLESS STEEL SECTIONS TO WHICH A MARINE PLY WOOD, 18mm THICK BOARD IS FIXED.
9. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE ULTIMATE SIZING OF THE KIOSK TO ENSURE ADEQUATE SPACE REQUIREMENTS.
10. TELEMETRY DUCTING TO BE IN ACCORDANCE WITH BS 4660 AND BS EN 1401.
11. ELECTRICAL REQUIREMENTS TO BE IN ACCORDANCE WITH ESB SPECIFICATION.
12. THE ROOF OF THE KIOSK SHALL BE REMOVABLE (BOLTS) TO FACILITATE BACKBOARD REMOVAL.
13. ALL EXPOSED PIPEWORK TO BE ADEQUATELY INSULATED WITH PIPE LAGGING.
14. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
15. WATER TIGHT SEALS ARE TO BE PROVIDED WHERE DUCTING ENTERS DUCT CHAMBERS AND KIOSKS. ALL DUCTING TO BE INSTALLED WITH DRAW CORDS.
16. THE KIOSK SHALL NOT BE LOCATED IN AREAS THAT ARE SUSCEPTIBLE TO FLOODING AT A FREQUENCY OF MORE THAN 1:30 YEARS RECURRENCE. THE KIOSK FACILITY SHOULD BE DESIGNED FOR INUNDATION. THE FINISHED SLAB LEVEL SHOULD BE POSITIONED ABOVE THE 1:100 YEARS FLOOD LEVEL. ALL ELECTRICAL CONTROL EQUIPMENT SHALL BE WATER RESISTANT AND POSITIONED ABOVE THE 1:200 YEAR FLOOD LEVEL.
17. ALL DIMENSIONS ARE MINIMUM DIMENSIONS AND MAY VARY TO SUIT THE KIOSK REQUIREMENT.

VENTILATION GRILLES COMPLETE WITH FLY SCREENS TO BE PROVIDED AT HIGH LEVEL ON ONE SIDE OF THE KIOSK AND AT LOW LEVEL ON THE OPPOSITE SIDE TO ENSURE THAT CROSS VENTILATION IS ACHIEVED.



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

STANDARD DETAILS - WASTEWATER



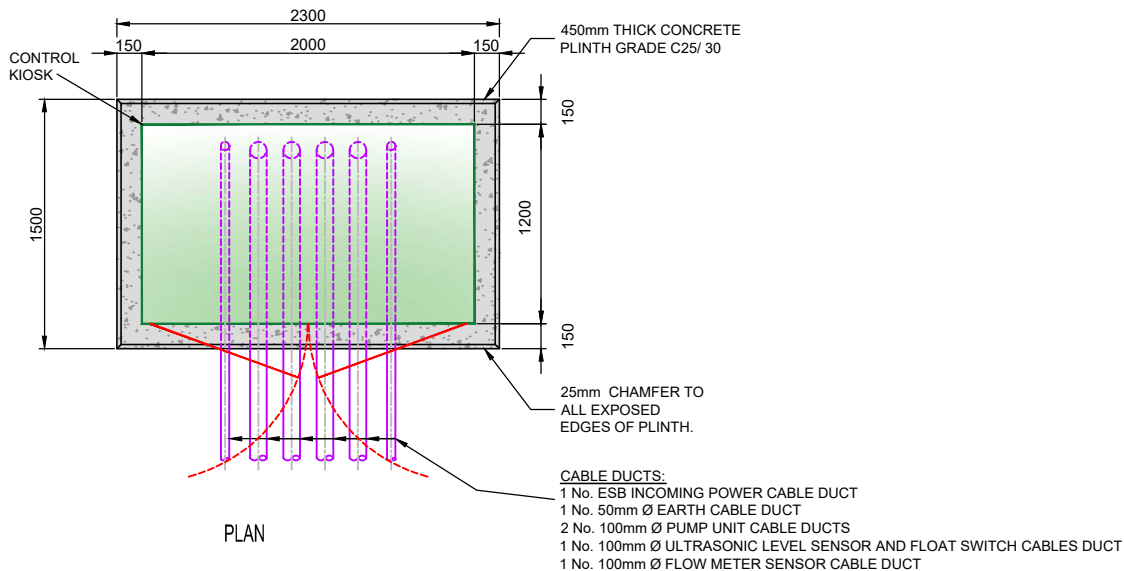
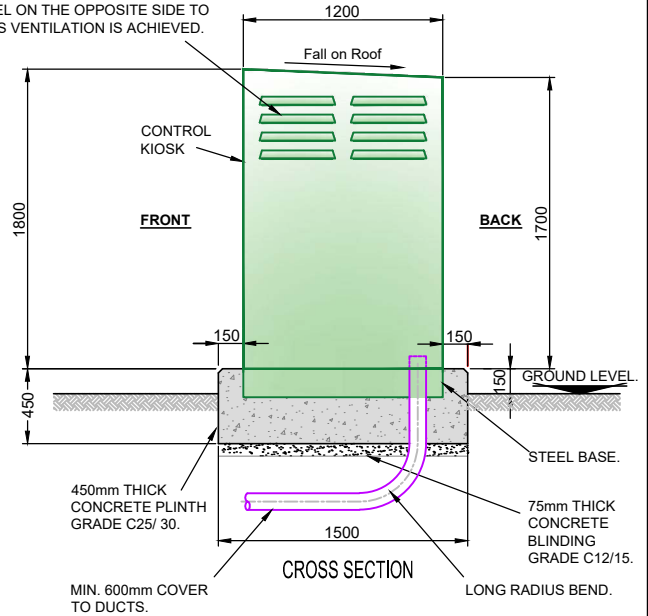
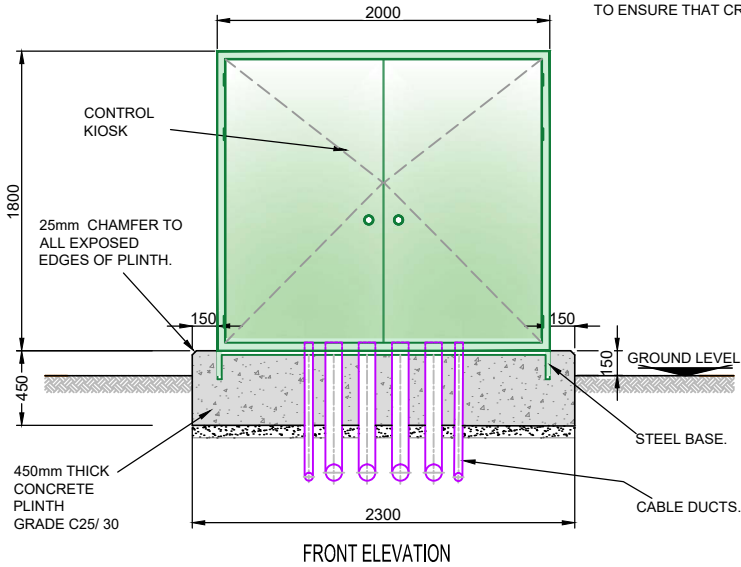
No.	Date	Drn	Chk	Description	App
3	07/20	RH	TOC	Modified Telemetry Control Kiosk dimensions	MOD
2	11/17	JMC	TOC	Updated note 9	MOD
1	08/16	JMC	TOC	Added note 5 (kiosk doors)	MOD
0	09/15	JMC	TOC	Initial Issue	SL

TITLE	SCALE	DATE
TYPE 1 PUMPING STATION CONTROL KIOSK	NOT TO SCALE	SEPT. 2015

DRAWING No.	REV
STD-WW-30	3

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. KIOSKS TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED MILD STEEL PLATE (MINIMUM 3mm THICKNESS) TO BS EN 1461. STAINLESS STEEL MAY BE USED AS AN ALTERNATIVE KIOSK MATERIAL, PARTICULARLY IN SEVERE ENVIRONMENTS, SUBJECT TO AGREEMENT WITH IRISH WATER.
3. COLOUR TO BE HOLLY GREEN BS 4800 14 C39. INTERIOR FINISH TO BE WHITE UNLESS APPROVED BY IRISH WATER.
4. THE QUALITY OF KIOSK CONSTRUCTION SHALL ENSURE THAT THE FOLLOWING IS ACHIEVED:
  - A) A THERMAL TRANSMITTANCE OF 1.5W PER m<sup>2</sup>K
  - B) A FIRE RESISTANCE (RETENTION OF STABILITY, INTEGRITY AND INSULATION) EQUIVALENT TO CLASS 2 OF BS 476, WHEN TESTED IN ACCORDANCE WITH BS 476 FOR A PERIOD EXCEEDING 30 MINUTES.
  - C) AN IP RATING OF IP55 OR EQUIVALENT.
5. KIOSK TO HAVE SINGLE OR DOUBLE STEEL/GRP DOORS WITH MULTIPLE LOCKS TO LPS 1175 SR3 OR EN 1627. MINIMUM DOUBLE LOCKS WITH BOLTS THAT ENGAGE INTO THE SILL & HEADER AS WELL AS BETWEEN THE TWO LEAVES OR LEAF & FRAME. LEADING EDGE OF LEAVES TO HAVE EITHER REBATED EDGES OR FITTED WITH ASTRAGALS.
6. KIOSK TO BE BOLTED TO THE PLINTH THROUGH A BOTTOM FLANGE WITH GALVANISED MILD STEEL OR STAINLESS STEEL ANCHOR BOLTS.
7. THE BOTTOM FLANGE SHALL BE SEATED ON A NEOPRENE GASKET AND SEALED WITH MASTIC.
8. REAR WALL SHALL BE REINFORCED WITH STAINLESS STEEL SECTIONS TO WHICH A MARINE PLY WOOD, 18mm THICK BOARD IS FIXED.
9. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE ULTIMATE SIZING OF THE KIOSK TO ENSURE ADEQUATE SPACE REQUIREMENTS.
10. TELEMETRY DUCTING TO BE IN ACCORDANCE WITH BS 4660 AND BS EN 1401.
11. ELECTRICAL REQUIREMENTS TO BE IN ACCORDANCE WITH ESB SPECIFICATION.
12. THE ROOF OF THE KIOSK SHALL BE REMOVABLE (BOLTS) TO FACILITATE BACKBOARD REMOVAL.
13. ALL EXPOSED PIPEWORK TO BE ADEQUATELY INSULATED WITH PIPE LAGGING.
14. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
15. WATER TIGHT SEALS ARE TO BE PROVIDED WHERE DUCTING ENTERS DUCT CHAMBERS AND KIOSKS. ALL DUCTING TO BE INSTALLED WITH DRAW CORDS.
16. THE KIOSK SHALL NOT BE LOCATED IN AREAS THAT ARE SUSCEPTIBLE TO FLOODING AT A FREQUENCY OF MORE THAN 1:30 YEARS RECURRENCE. THE KIOSK FACILITY SHOULD BE DESIGNED FOR INUNDATION. THE FINISHED SLAB LEVEL SHOULD BE POSITIONED ABOVE THE 1:100 YEARS FLOOD LEVEL. ALL ELECTRICAL CONTROL EQUIPMENT SHALL BE WATER RESISTANT AND POSITIONED ABOVE THE 1:200 YEAR FLOOD LEVEL.
17. ALL DIMENSIONS ARE MINIMUM DIMENSIONS AND MAY VARY TO SUIT THE KIOSK REQUIREMENT.
18. ALTERNATIVE BLOCKWORK STRUCTURE WITH CONCRETE ROOF TO BE PROVIDED IF REQUIRED BY PLANNING PERMISSION OR TO INCREASE SECURITY IN ACCORDANCE WITH CLAUSE 5.22 OF THE CODE OF PRACTICE.

VENTILATION GRILLES COMPLETE WITH FLY SCREENS TO BE PROVIDED AT HIGH LEVEL ON ONE SIDE OF THE KIOSK AND AT LOW LEVEL ON THE OPPOSITE SIDE TO ENSURE THAT CROSS VENTILATION IS ACHIEVED.



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

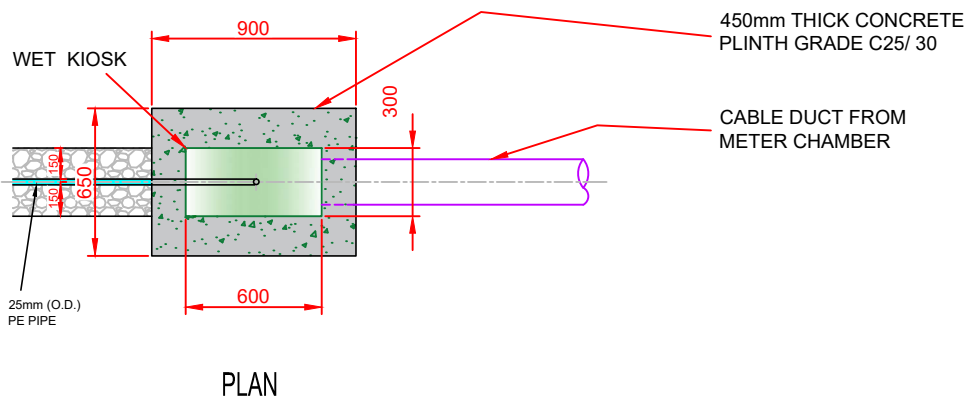
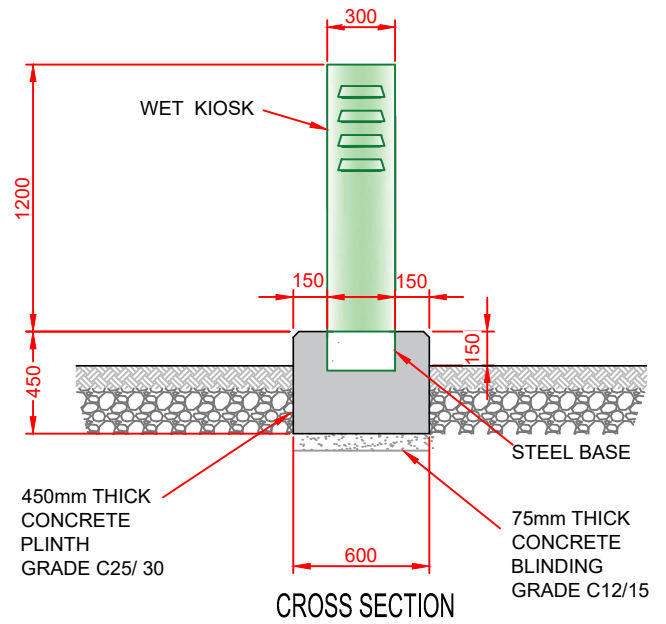
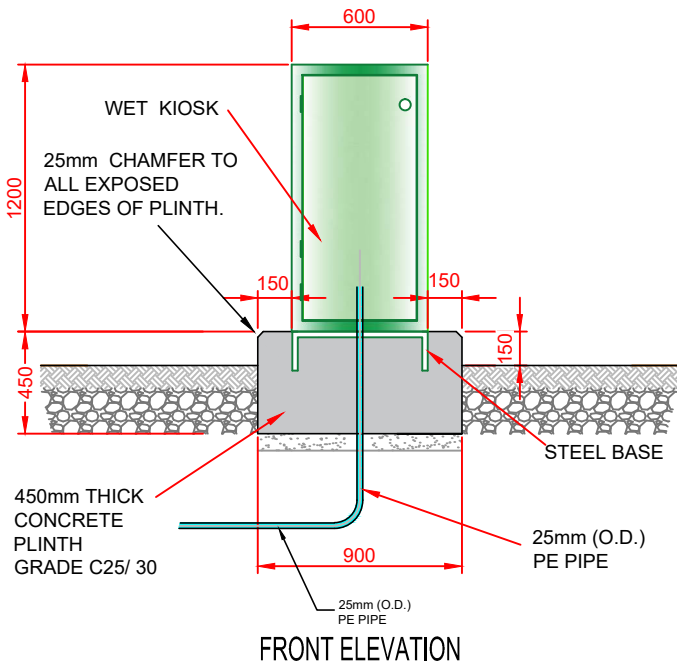


0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Drn	Chk	Description	App

<b>STANDARD DETAILS - WASTEWATER</b>	
TITLE	TYPE 2 AND TYPE 3 PUMPING STATION CONTROL KIOSK

SCALE NOT TO SCALE	DATE SEPT. 2019
DRAWING No. <b>STD-WW-30A</b>	REV <b>0</b>

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. WET KIOSK TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED MILD STEEL PLATE (MINIMUM 3mm THICK) TO BS EN 1461. ALTERNATIVE MATERIAL, STAINLESS STEEL IN HARSH ENVIRONMENTS, FOR WET KIOSK SUBJECT TO AGREEMENT WITH IRISH WATER.
3. KIOSK TO HAVE SINGLE OR DOUBLE STEEL/GRP DOORS WITH MULTIPLE LOCKS TO LPS 1175 SR3 OR EN 1627. MINIMUM DOUBLE LOCKS WITH BOLTS THAT ENGAGE INTO THE SILL & HEADER AS WELL AS BETWEEN THE TWO LEAVES OR LEAF & FRAME. LEADING EDGE OF LEAVES TO HAVE EITHER REBATED EDGES OR FITTED WITH ASTRAGALS.
4. COLOUR TO BE HOLLY GREEN BS 4800 14 C39. INTERIOR FINISH TO BE WHITE UNLESS APPROVED BY IRISH WATER.
5. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE ULTIMATE SIZING OF THE KIOSK TO ENSURE ADEQUATE SPACE REQUIREMENTS. .
6. ALL EXPOSED PIPEWORK TO BE ADEQUATELY INSULATED WITH PIPE LAGGING.
7. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
8. ALL DIMENSIONS ARE MINIMUM DIMENSIONS AND MAY VARY TO SUIT THE KIOSK REQUIREMENT.



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



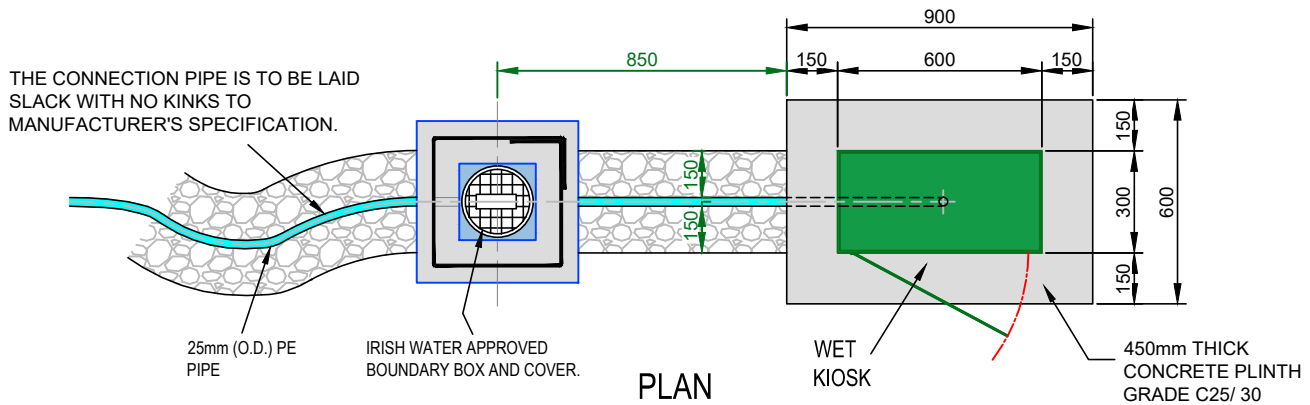
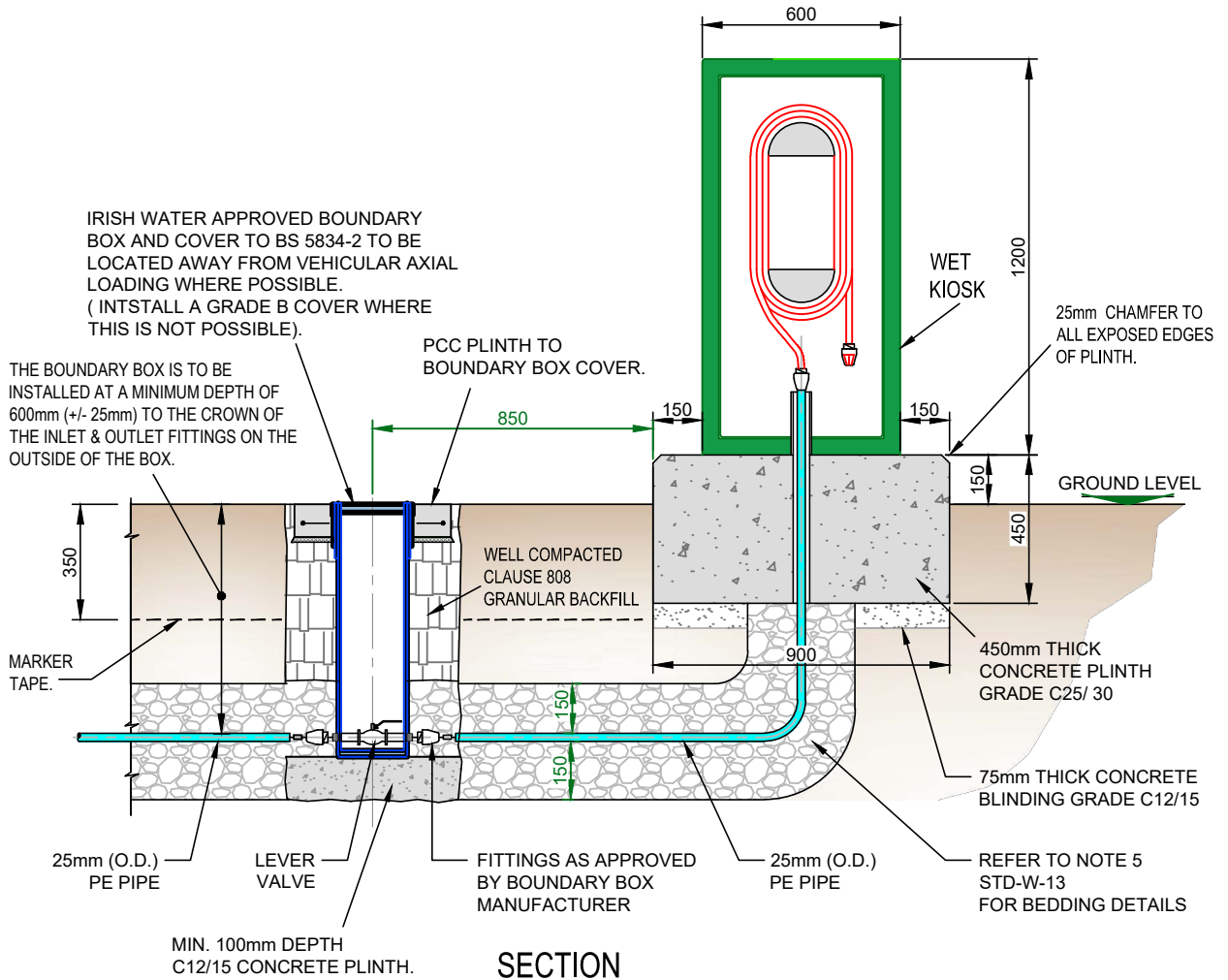
No.	Date	Drn	Chk	Description	App
3	07/20	RH	TOC	Wet kiosk details updated	MOD
2	11/17	JMC	TOC	Updated note 6	MOD
1	08/16	JMC	TOC	added note 3 (kiosk doors)	MOD
0	09/15	JMC	TOC	Initial Issue	SL

STANDARD DETAILS - WASTEWATER	
TITLE	SCALE
PUMPING STATION WET KIOSK	NOT TO SCALE

DATE	REV
SEPT. 2015	3

DRAWING No.  
**STD-WW-31**

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. WET KIOSK TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED MILD STEEL PLATE (MINIMUM 3mm THICK) TO BS EN 1461. ALTERNATIVE MATERIAL, STAINLESS STEEL IN HARSH ENVIRONMENTS, FOR WET KIOSK SUBJECT TO AGREEMENT WITH IRISH WATER.
3. KIOSK TO HAVE SINGLE OR DOUBLE STEEL/GRP DOORS WITH MULTIPLE LOCKS TO LPS 1175 SR3 OR EN 1627. MINIMUM DOUBLE LOCKS WITH BOLTS THAT ENGAGE INTO THE SILL & HEADER AS WELL AS BETWEEN THE TWO LEAVES OR LEAF & FRAME. LEADING EDGE OF LEAVES TO HAVE EITHER REBATED EDGES OR FITTED WITH ASTRAGALS.
4. COLOUR TO BE HOLLY GREEN BS 4800 14 C39. INTERIOR FINISH TO BE WHITE UNLESS APPROVED BY IRISH WATER.
5. THE DEVELOPER SHALL BE RESPONSIBLE FOR THE ULTIMATE SIZING OF THE KIOSK TO ENSURE ADEQUATE SPACE REQUIREMENTS. .
6. ALL EXPOSED PIPEWORK TO BE ADEQUATELY INSULATED WITH PIPE LAGGING.
7. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
8. ALL DIMENSIONS ARE MINIMUM DIMENSIONS AND MAY VARY TO SUIT THE KIOSK REQUIREMENT.



## WET KIOSK WATER SERVICE CONNECTION DETAIL

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

STANDARD DETAILS - WASTEWATER

SCALE  
NOT TO SCALE

DATE  
SEPT. 2015

TITLE

PUMPING STATION  
WET KIOSK WATER SERVICE  
CONNECTION ARRANGEMENT

DRAWING No.

STD-WW31A

REV

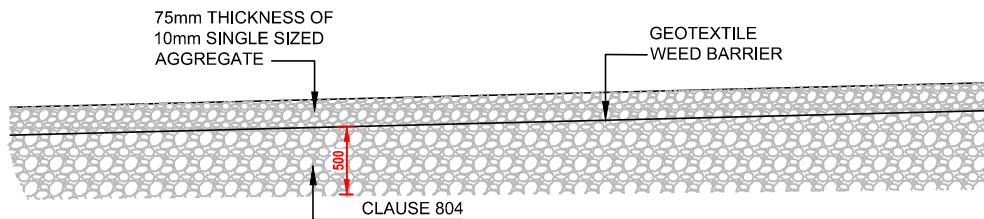
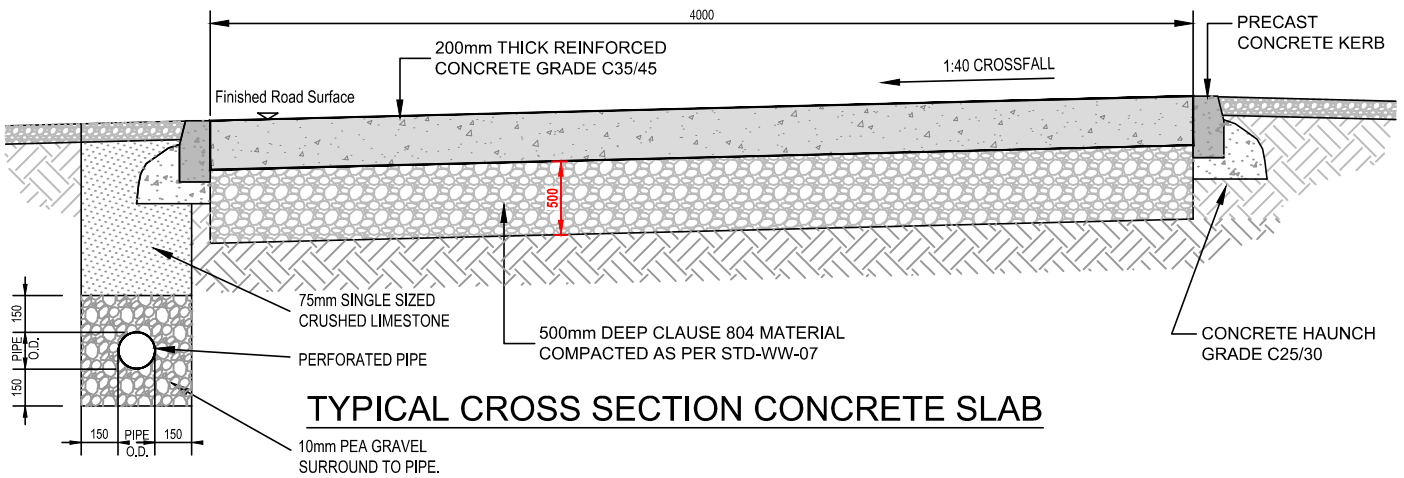
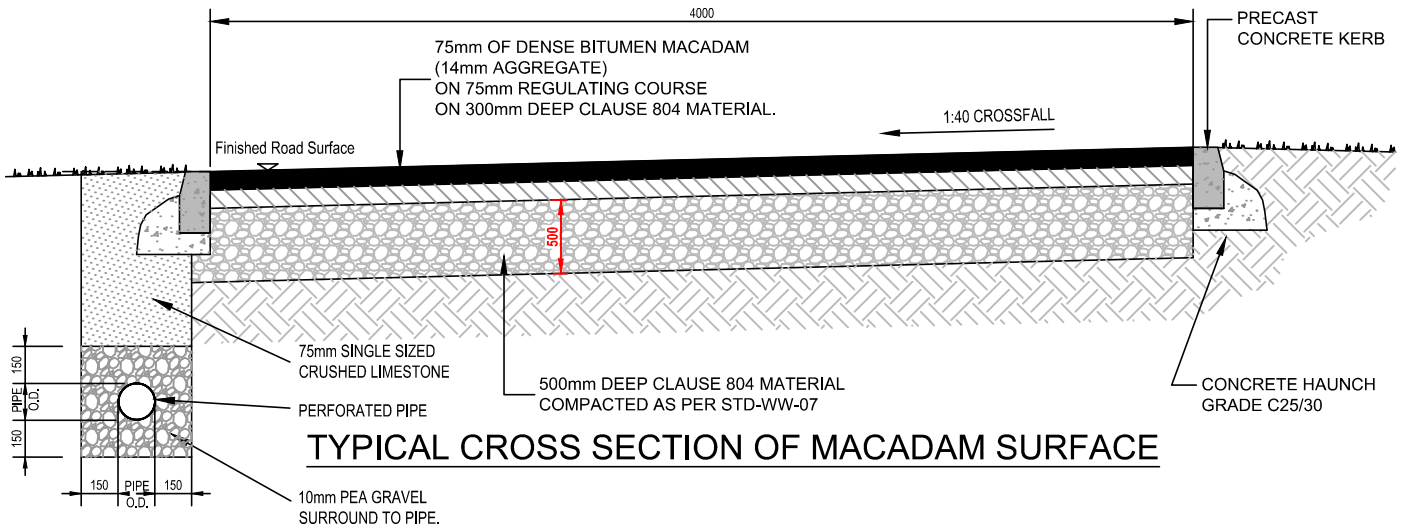
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UISCE  
ÉIREANN : IRISH  
WATER

No.	Date	Drn	Chk	Description	App
0	07/20	RH	TOC	Initial Issue	MOD



1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. REGULATING COURSE TO BE REVIEWED BY IRISH WATER.
3. STRUCTURAL DESIGN AND REINFORCEMENT DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
4. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
5. PRECAST KERBS TO BE IN ACCORDANCE WITH IS EN 1340:2003.



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



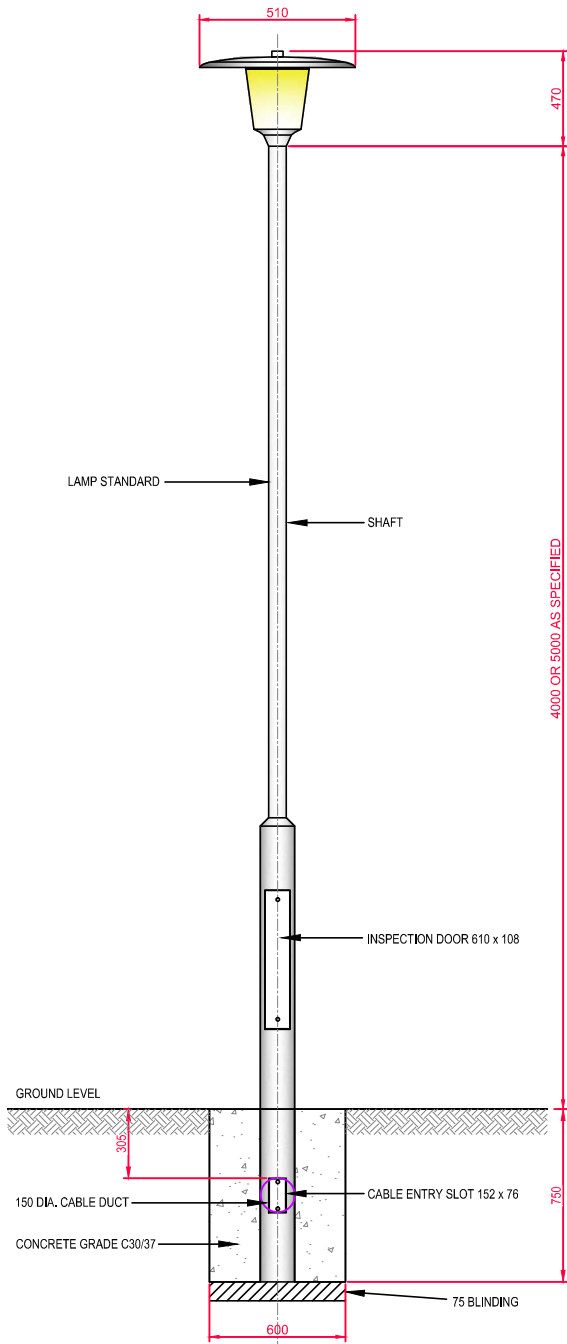
No.	Date	Drn	Chk	Description	App
2	07/20	RH	TOC	Material depths modified, permeable area detail extended, drainage detail added	MOD
1	11/17	JMC	TOC	Updated notes 2 & 3	MOD
0	09/15	JMC	TOC	Initial Issue	SL

STANDARD DETAILS - WASTEWATER	
TITLE	SCALE
HARDSTANDING AREA PUMPING STATION (PERMEABLE AND IMPERMEABLE)	NOT TO SCALE

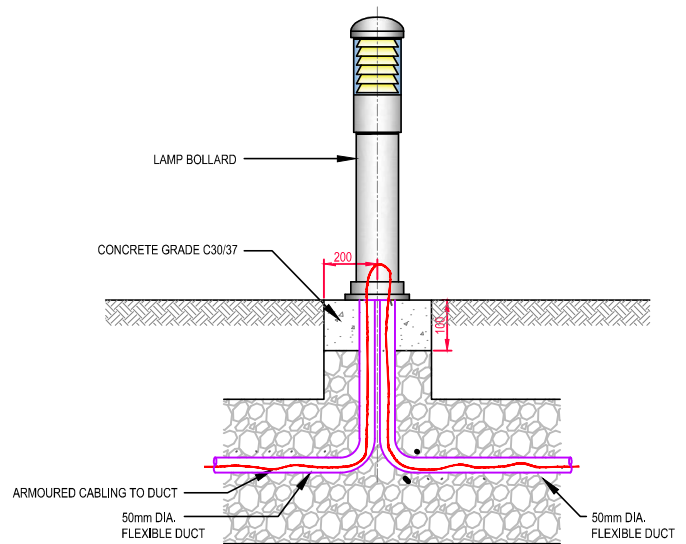
DATE	REV
SEPT. 2015	2

DRAWING No. **STD-WW-32**

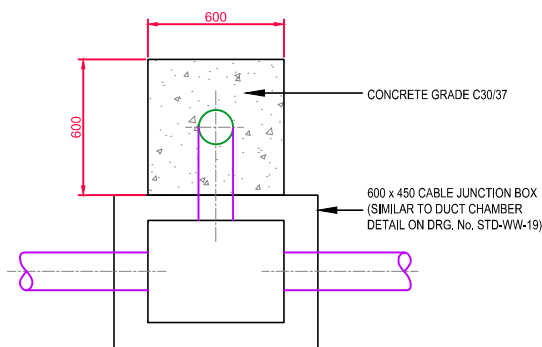
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. LAMP BOLLARD TO BE REVIEWED BY IRISH WATER.
3. LAMP STANDARD TO BE REVIEWED BY IRISH WATER.
4. ELECTRICAL DUCTING TO BE IN ACCORDANCE WITH ESB SPECIFICATION.



**SECTION**

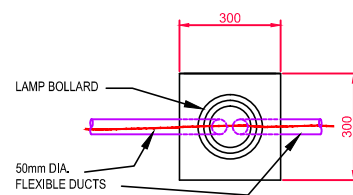


**SECTION**



**PLAN**

**LAMP STANDARD**



**PLAN**

**LAMP BOLLARD**

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



No.	Date	Drn	Chk	Description	App
2	07/20	RH	TOC	Cable ducts to Lamp Bollard Revised	MOD
1	11/17	JMC	TOC	Updated notes 2 & 3	MOD
0	09/15	JMC	TOC	Initial Issue	SL

**STANDARD DETAILS - WASTEWATER**

TITLE

**LAMP BOLLARD & LAMP STANDARD**

SCALE  
NOT TO SCALE

DATE  
SEPT. 2015

DRAWING No.

**STD-WW-33**

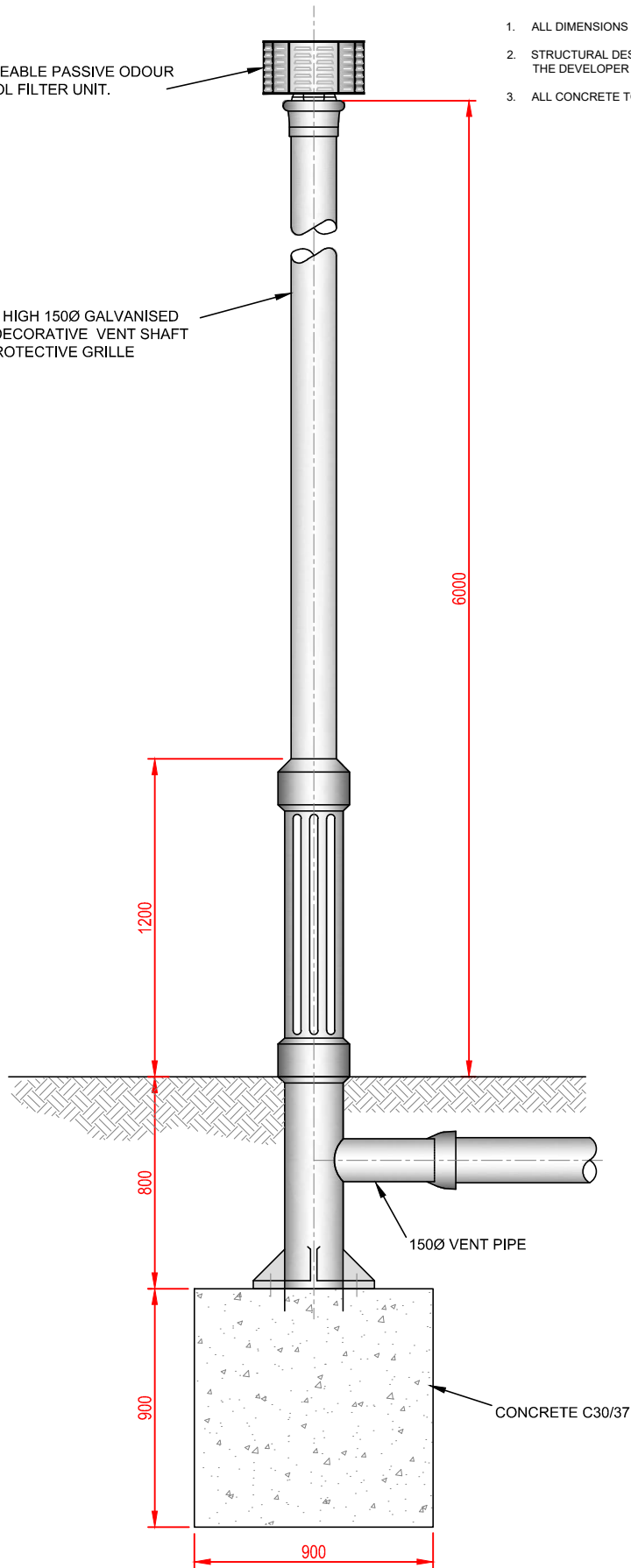
REV

**2**

REPLACEABLE PASSIVE ODOUR CONTROL FILTER UNIT.

6000mm HIGH 150Ø GALVANISED STEEL DECORATIVE VENT SHAFT WITH PROTECTIVE GRILLE

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. STRUCTURAL DESIGN AND REINFORCEMENT DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
3. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206



VENT DETAIL

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

STANDARD DETAILS - WASTEWATER

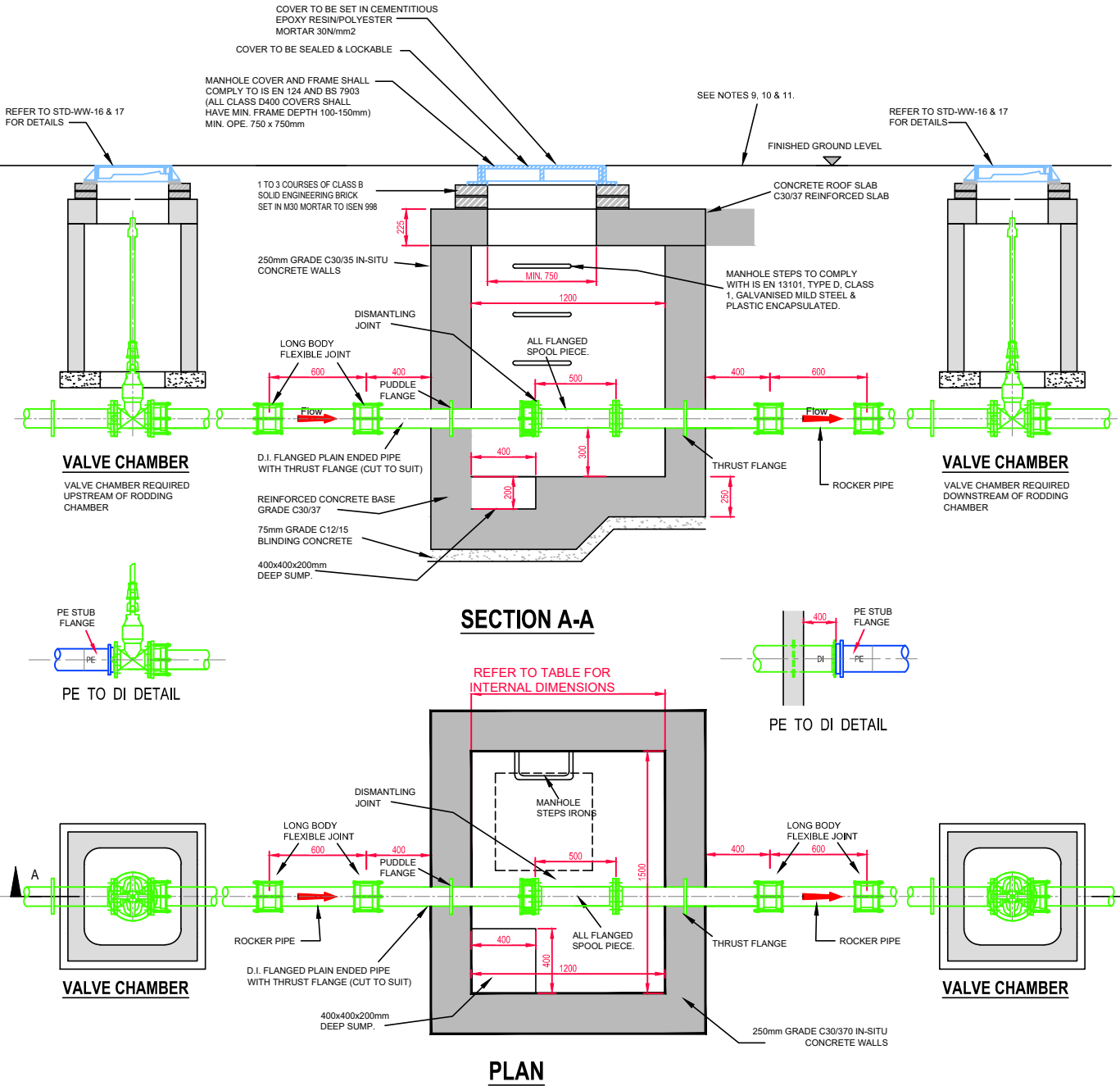


No.	Date	Drm	Chk	Description	App
2	07/20	RH	TOC	General presentation update, stack height reduced, passive odour control filter unit note added.	MOD
1	11/17	JMC	TOC	Updated note 2	MOD
0	09/15	JMC	TOC	Initial Issue	SL

TITLE	VENT STACK
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SCALE	NOT TO SCALE	DATE	SEPT. 2015
DRAWING No.	STD-WW-34	REV	2

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420. (SEE STD-WW-35A)
3. CONCRETE CAST IN-SITU BASE C25/30 TO IS EN 206 WITH DRAINAGE SUMP AS PER DETAIL SHOWN.
4. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
5. MANHOLE ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE AND DEAD LOADS, AND CONSIST OF C30/35 CONCRETE, TO IE EN 206, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IW REVIEW, DEVELOPER SHALL SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH IS420 & IS EN 1917 IN RESPECT ALL PRECAST UNITS
6. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
7. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
8. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
9. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
10. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
11. 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 (mm)	INTERNAL CHAMBER DIMENSIONS	COVER DIMENSIONS
80 - 300	1200 x 1500mm	600 x 600mm

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

STANDARD DETAILS - WASTEWATER

SCALE NOT TO SCALE DATE SEPT. 2019

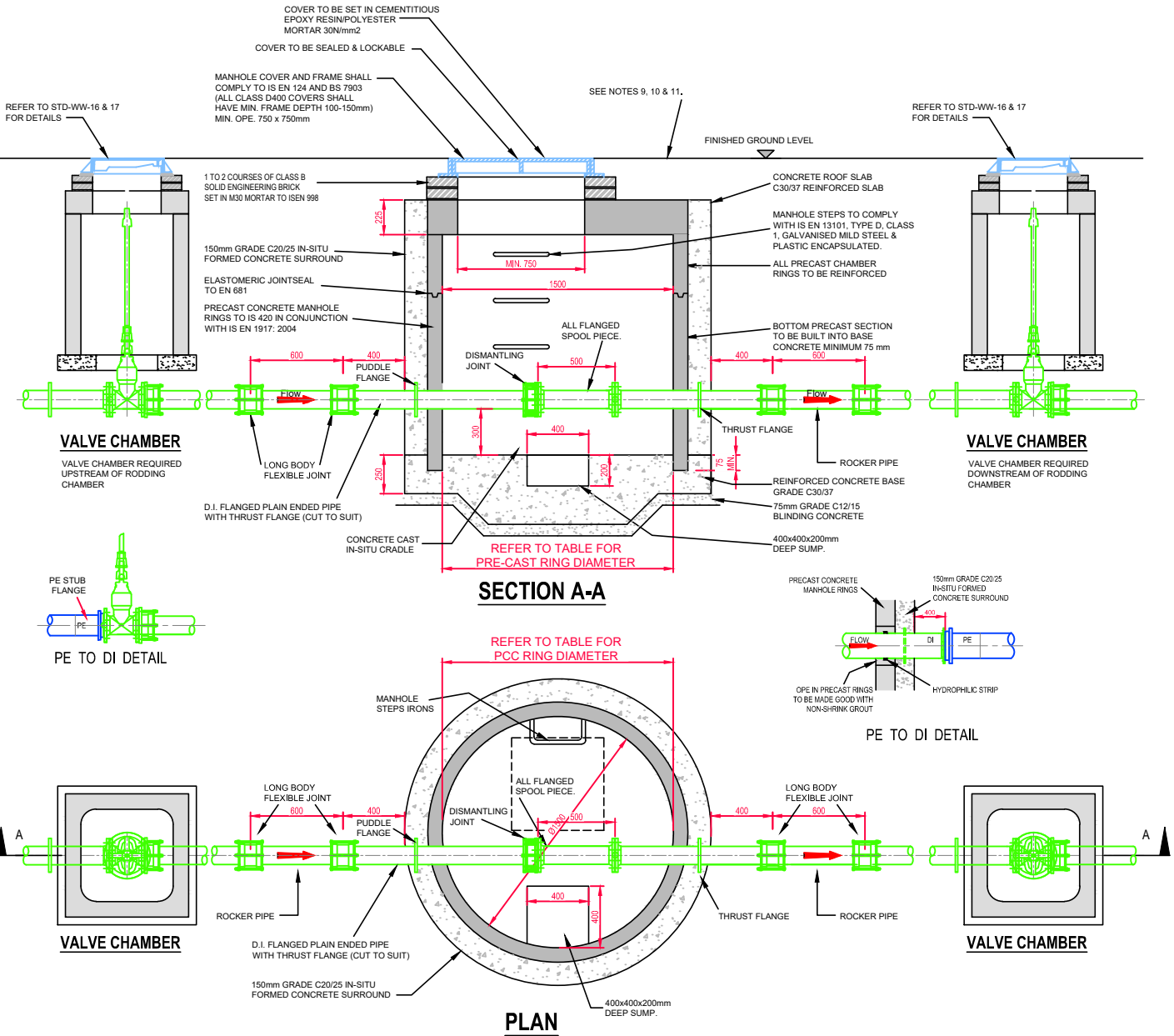
TITLE RISING MAIN RODDING CHAMBER IN-SITU CONCRETE OPTION

DRAWING No. STD-WW-35 REV 0



0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Drm	Chk	Description	App

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND IS 420. (SEE STD-WW-35A)
3. CONCRETE CAST IN-SITU BASE C25/30 TO IS EN 206 WITH DRAINAGE SUMP AS PER DETAIL SHOWN.
4. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
5. MANHOLE ROOF SLABS SHALL BE DESIGNED TO CARRY ALL LIVE AND DEAD LOADS, AND CONSIST OF C30/35 CONCRETE, TO IE EN 206, WITH A MINIMUM THICKNESS OF 225mm. ALTERNATIVELY, PRE-CAST CONCRETE ROOFS MAY BE USED, SUBJECT TO IW REVIEW, DEVELOPER SHALL SUBMIT A CERTIFICATE OF COMPLIANCE IN ACCORDANCE WITH IS420 & IS EN 1917 IN RESPECT ALL PRECAST UNITS
6. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO REVIEW BY IRISH WATER.
7. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH AROUND COVERS IN GREEN AREAS.
8. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO REVIEW BY IRISH WATER.
9. ANY SPECIAL ROAD REINSTATEMENT AROUND COVER & FRAME SHALL BE TO ROAD AUTHORITY'S REQUIREMENTS.
10. NEW ROAD CONSTRUCTION & SURFACE FINISH TO BE TO ROAD AUTHORITY REQUIREMENTS.
11. 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.



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

**STANDARD DETAILS - WASTEWATER**

SCALE: NOT TO SCALE  
DATE: SEPT. 2019

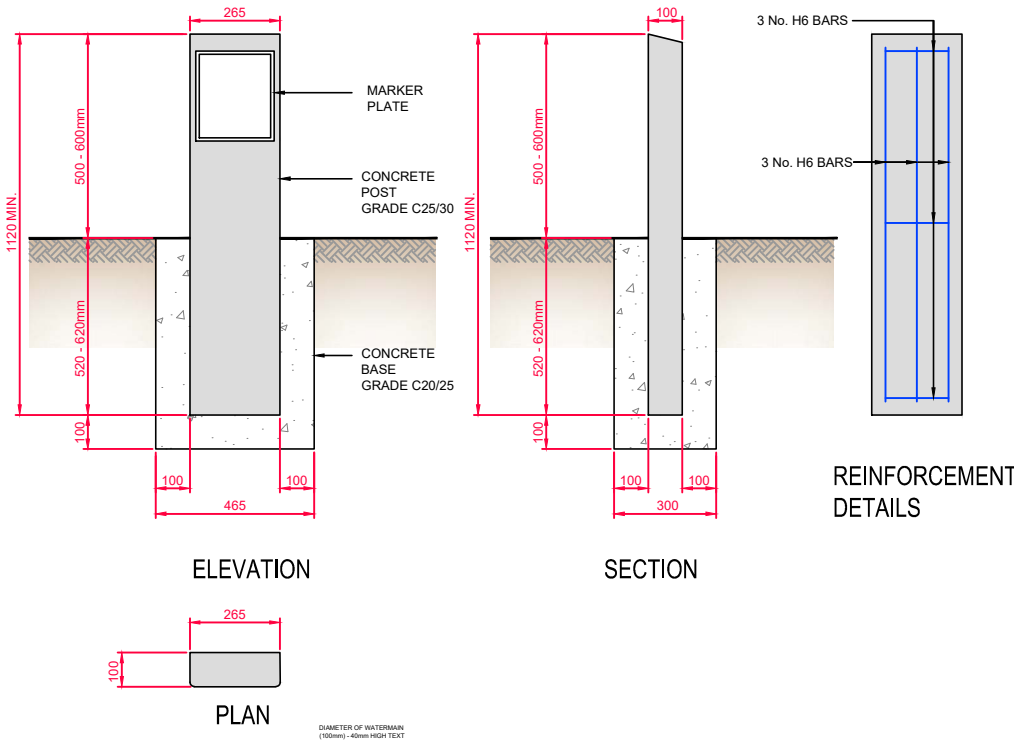
TITLE: RISING MAIN  
RODDING CHAMBER  
PRECAST CONCRETE OPTION

DRAWING No.: STD-WW35A  
REV: 0

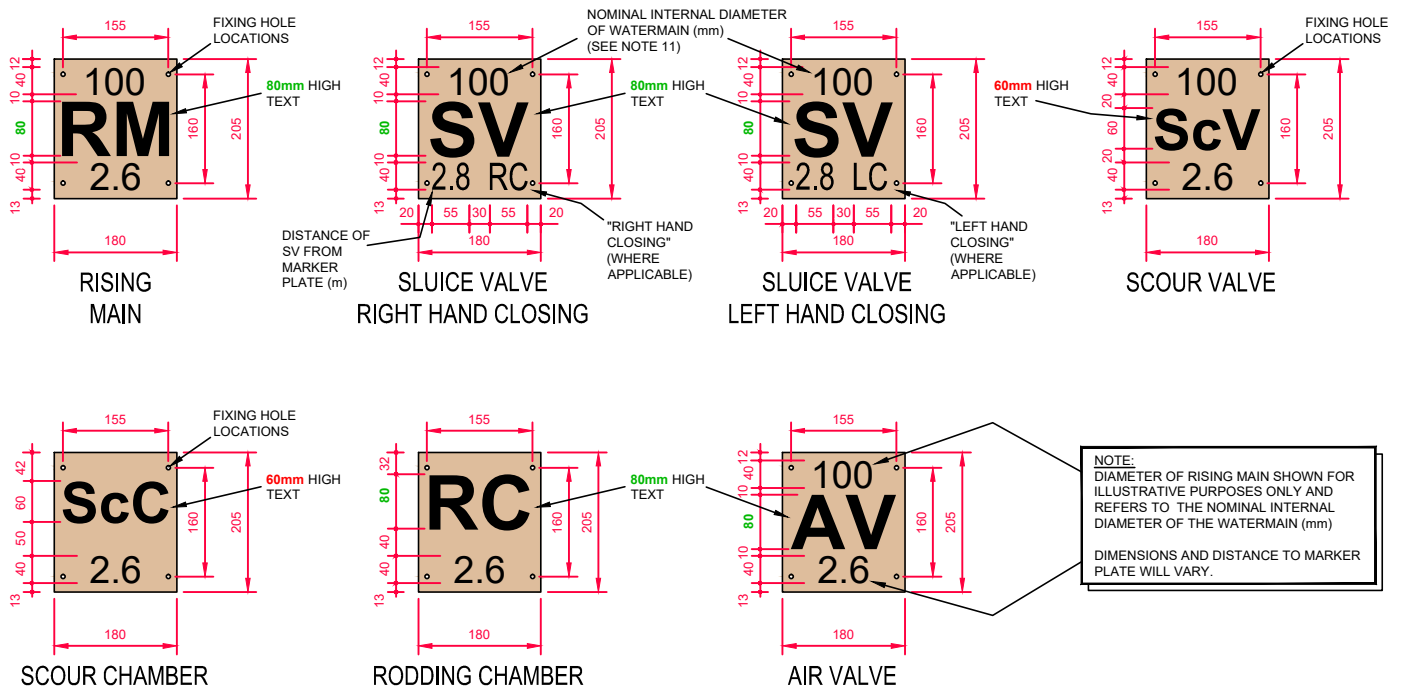


0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Drm	Chk	Description	App





- WHERE PRACTICAL MARKER PLATES SHALL BE FIXED TO ADJACENT WALLS OR ALTERNATIVELY ATTACHED TO MARKER POSTS.
- PLATES TO BE FIXED IN POSITION USING WALL PLUGS AND STAINLESS STEEL SCREWS.
- MARKER PLATES TO BE MANUFACTURED IN ACCORDANCE WITH BS 3251.
- RISING MAIN, SLUICE VALVE, AIR VALVE, SCOUR VALVE, AND RODDING CHAMBER, ETC. SHOULD BE CAST ALUMINIUM. ALL CHARACTERS SHOULD BE BLACK ON BROWN PAINT BACKGROUND. ALTERNATIVE MATERIAL MAY BE USED SUBJECT TO ACCEPTANCE BY IRISH WATER.
- CONCRETE MARKER POST TO BE GRADE C25 / 30 AND IN ACCORDANCE WITH IS EN 206/2013.
- CONCRETE BASE TO BE GRADE C25/25
- PLASTIC MARKER POSTS ARE NOT ACCEPTABLE.
- PAINTING SPECIFICATION: 2 PACK EPOXY PRIMER 40 - 60 MICRONS FOLLOWED BY 2 PACK HIGH GLOSS POLYURETHANE TOP COAT APPLIED AT 40 - 60 MICRONS
- REFERENCES TO PIPE DIAMETERS ON MARKER PLATES REFER SPECIFICALLY TO THE NOMINAL INTERNAL DIAMETER OF THE PIPE REGARDLESS OF PIPE MATERIAL

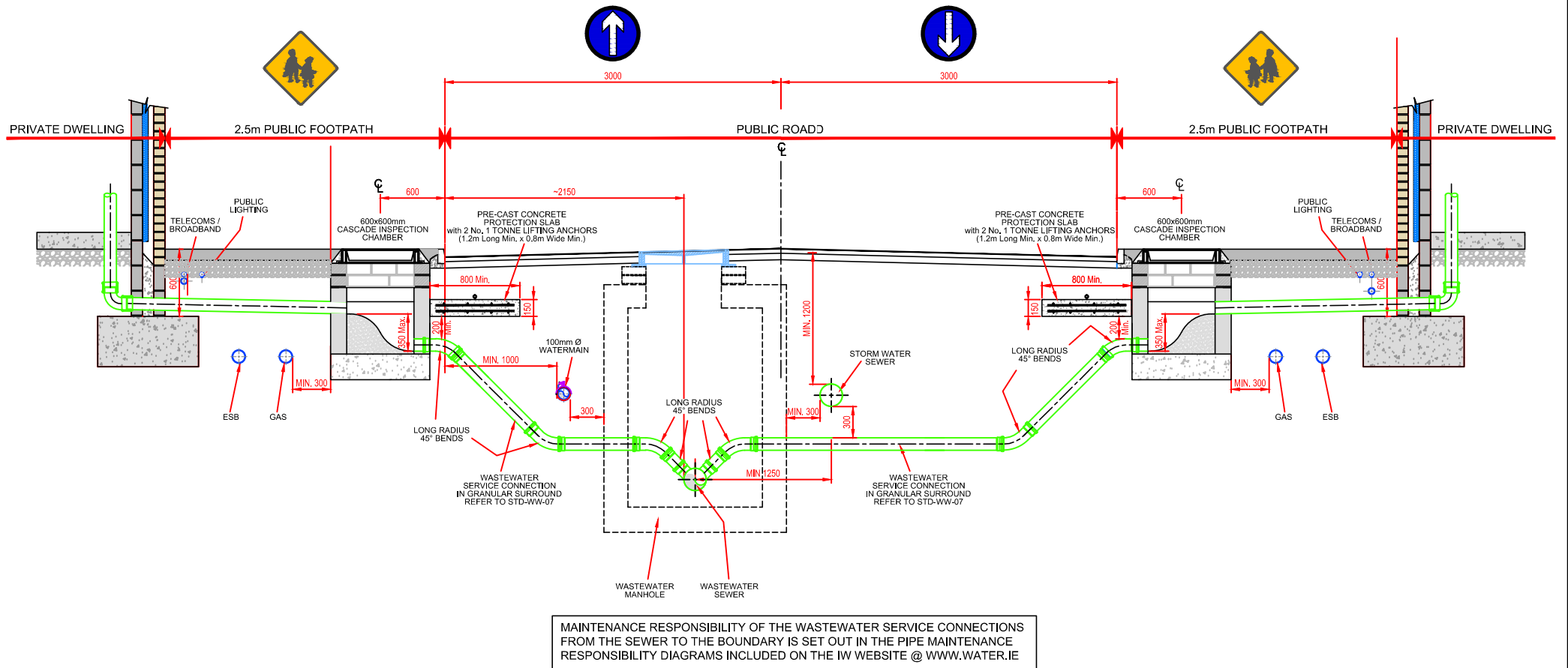


**NOTE:**  
DIAMETER OF RISING MAIN SHOWN FOR ILLUSTRATIVE PURPOSES ONLY AND REFERS TO THE NOMINAL INTERNAL DIAMETER OF THE WATERMAIN (mm)  
DIMENSIONS AND DISTANCE TO MARKER PLATE WILL VARY.

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

	<p style="text-align: center;"><b>STANDARD DETAILS - WASTEWATER</b></p>					<p>SCALE NOT TO SCALE</p>	<p>DATE SEPT. 2019</p>
	<p>TITLE</p> <p style="text-align: center;">MARKER POSTS / PLATES</p>					<p>DRAWING No.</p> <p style="text-align: center;">STD-WW-36</p>	<p>REV</p> <p style="text-align: center;">0</p>
	<p>0</p>	<p>07/20</p>	<p>RH</p>	<p>TOC</p>	<p>Initial Issue</p>	<p>MOD</p>	
<p>No.</p>	<p>Date</p>	<p>Drm</p>	<p>Chk</p>	<p>Description</p>	<p>App</p>		

1. FOR NOTES REFER TO STD-WW-13
2. LEAN-MIX LOW STRENGTH CONCRETE SURROUND REQUIRED TO SERVICE CONNECTIONS WITH LESS THAN 1.2m COVER IN TRAFFICKED AREAS.
3. SMALLER INSPECTION CHAMBERS WITH INTERNAL DIMENSIONS OF 450mm Ø OR 450x450mm MAY BE PERMITTED SUBJECT TO APPROVAL BY IRISH WATER



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



0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Drn	Chk	Description	App

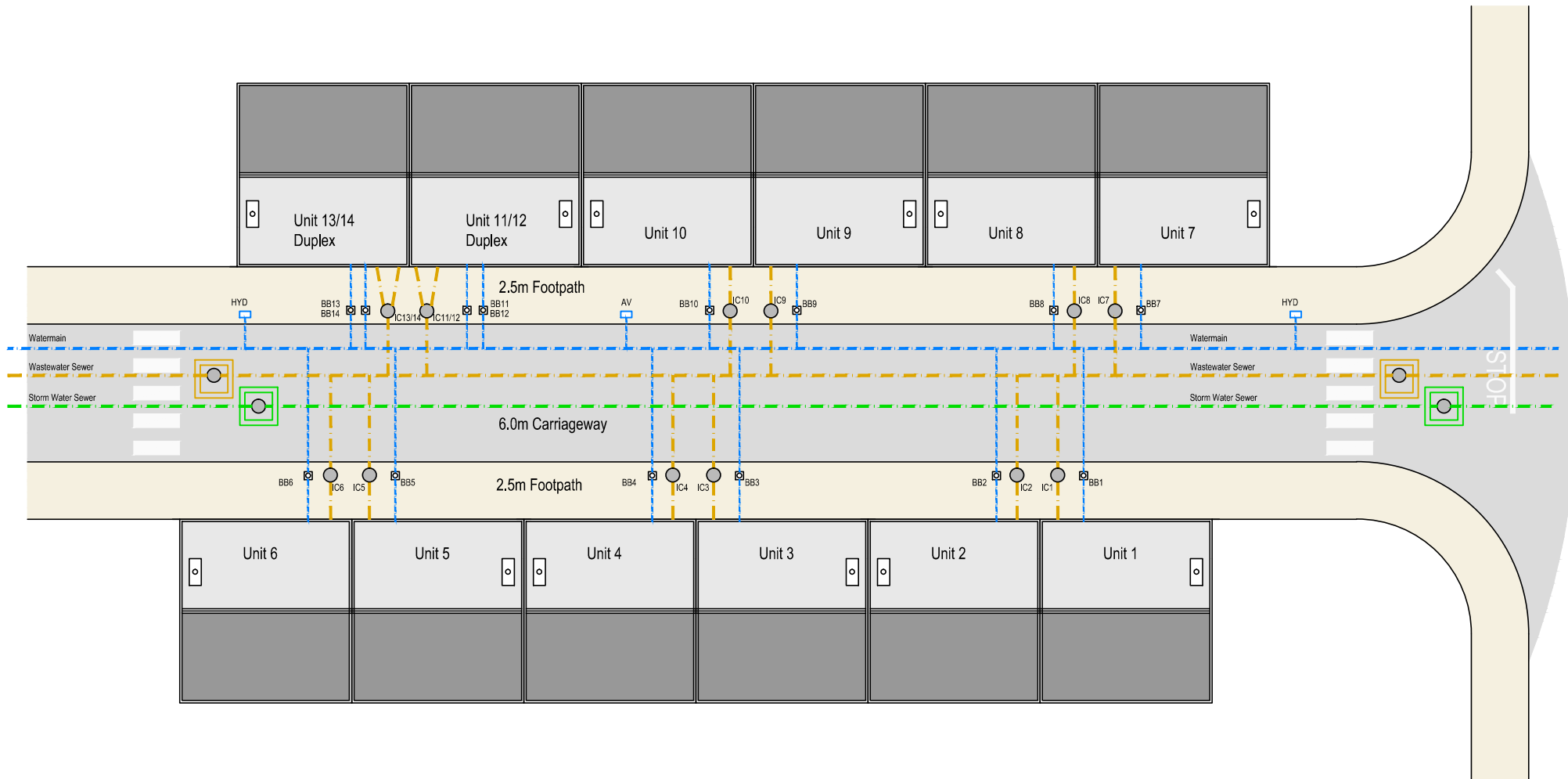
**STANDARD DETAILS - WASTEWATER**

TITLE

**SECTION SHOWING WASTEWATER SERVICES  
SEPARATION DETAILS IN HIGH DENSITY DEVELOPMENTS  
2.5m Wide Footpaths with 6.0m Wide Carriageway**

SCALE	DATE
NOT TO SCALE	APR. 2020
DRAWING No.	REV
<b>STD-WW-37</b>	<b>0</b>

1. FOR NOTES REFER TO STD-WW-13
2. CONCRETE SURROUND REQUIRED TO SERVICE CONNECTIONS WITH LESS THAN 1.2m COVER IN TRAFFICKED AREAS.
3. IN SITUATIONS WHERE THE INTERNAL LAYOUT OF UNITS PERMIT, IT MAY BE AGREEABLE TO SHARE ONE INSPECTION CHAMBER BETWEEN TWO PROPERTY UNITS. THIS SHOULD BE AGREED WITH IRISH WATER AT EARLY DESIGN STAGE.
4. MINIMUM DISTANCE BETWEEN SERVICE CONNECTIONS AND OTHER SERVICES CONNECTIONS TO BE 300mm.



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



No.	Date	Dm	Chk	Description	App
0	07/20	RH	TOC	Initial Issue	MOD

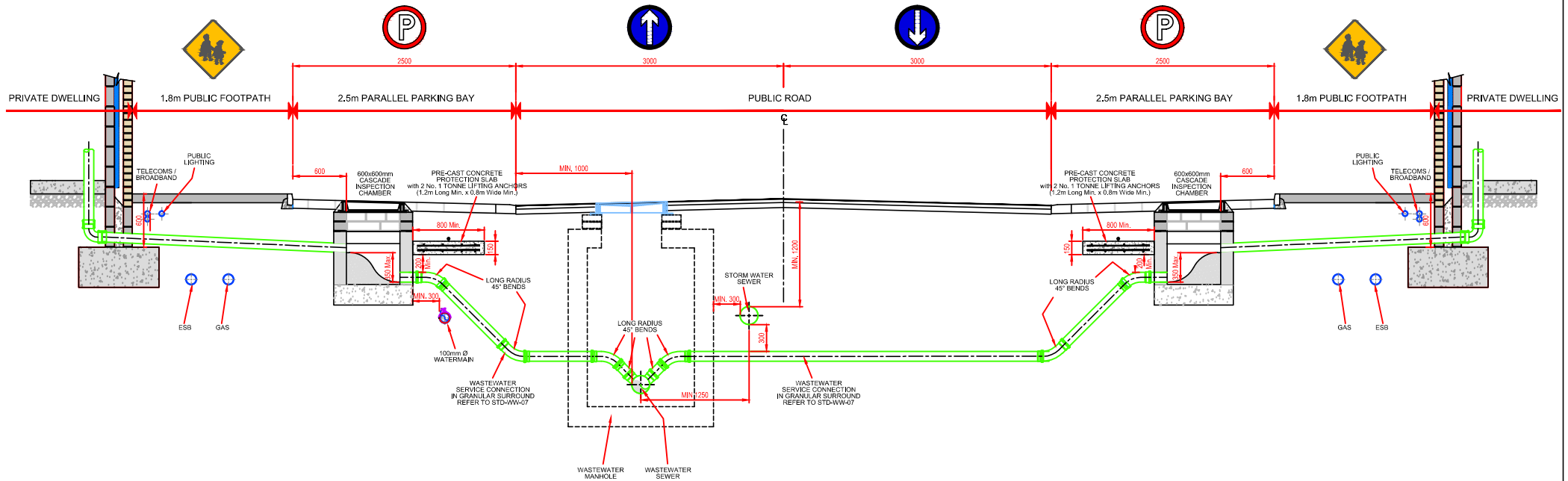
**STANDARD DETAILS - WASTEWATER**

TITLE

**LAYOUT PLAN SHOWING BELOW GROUND SERVICES SEPARATION DETAILS IN HIGH DENSITY DEVELOPMENTS  
2.5m Wide Footpaths with 6.0m Wide Carriageway**

SCALE NOT TO SCALE	DATE APR 2020
DRAWING No. <b>STD-WW-38</b>	REV <b>0</b>

- FOR NOTES REFER TO STD-WW-13
- CONCRETE SURROUND REQUIRED TO SERVICE CONNECTIONS WITH LESS THAN 1.2m COVER IN TRAFFICKED AREAS.



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

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



0	07/20	RH	TOC	Initial Issue	MOD
No.	Date	Dm	Chk	Description	App

STANDARD DETAILS - WASTEWATER

SCALE NOT TO SCALE DATE APR 2020

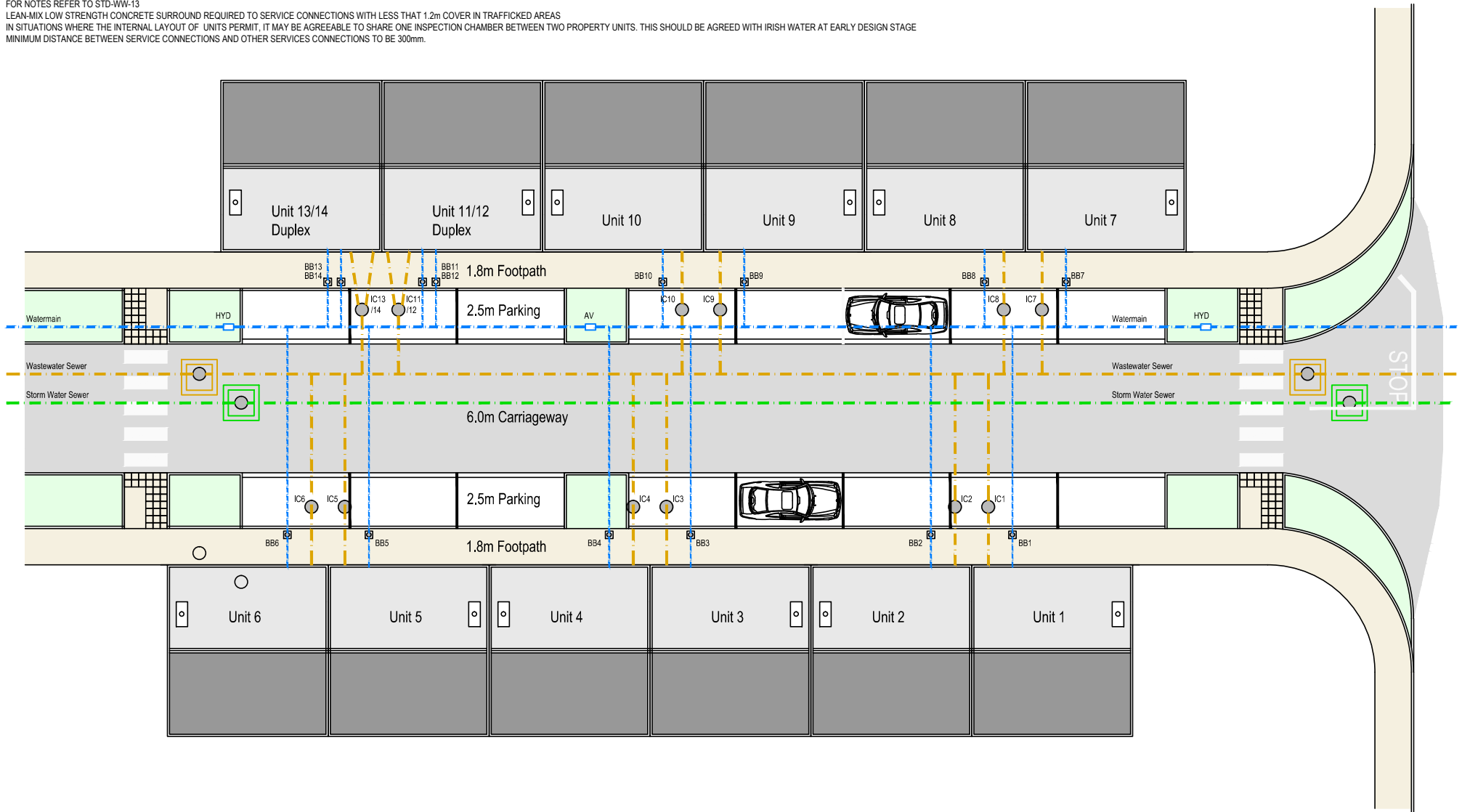
TITLE

SECTION SHOWING WASTEWATER SERVICES SEPARATION DETAILS IN HIGH DENSITY DEVELOPMENTS  
1.8m Wide Footpaths, 2.5m wide Parallel Parking Bays with 6.0m Wide Carriageway.

DRAWING No. REV

STD-WW- 39 0

1. FOR NOTES REFER TO STD-WW-13
2. LEAN-MIX LOW STRENGTH CONCRETE SURROUND REQUIRED TO SERVICE CONNECTIONS WITH LESS THAN 1.2m COVER IN TRAFFICKED AREAS
3. IN SITUATIONS WHERE THE INTERNAL LAYOUT OF UNITS PERMIT, IT MAY BE AGREEABLE TO SHARE ONE INSPECTION CHAMBER BETWEEN TWO PROPERTY UNITS. THIS SHOULD BE AGREED WITH IRISH WATER AT EARLY DESIGN STAGE
4. MINIMUM DISTANCE BETWEEN SERVICE CONNECTIONS AND OTHER SERVICES CONNECTIONS TO BE 300mm.



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



No.	Date	Drm	Chk	Description	App
0	07/20	RH	TOC	Initial Issue	MOD

**STANDARD DETAILS - WASTEWATER**

TITLE

**LAYOUT PLAN SHOWING BELOW GROUND SERVICES  
SEPARATION DETAILS IN HIGH DENSITY DEVELOPMENTS  
1.8m Wide Footpaths, 2.5m wide Parallel Parking Bays with 6.0m Wide Carriageway.**

SCALE NOT TO SCALE	DATE APR 2020
DRAWING No. <b>STD-WW-40</b>	REV <b>0</b>



# STANDARD DETAILS FOR WASTEWATER NETWORKS: REVISION LOG – 04 (Mar. 2020)

Drg. No.	DRAWING TITLE	MATERIAL CHANGE	EDITORIAL CHANGE	REV	COMMENTS
STD-WW-01	WASTEWATER SERVICE CONNECTION MAINTENANCE RESPONSIBILITY	B-C ownership revised – table revised	Updated & added Notes	2	Drawing revised
STD-WW-02	TYPICAL LAYOUT FOR SEWER WITHIN NEW DEVELOPMENTS	Connection interface detail added, dead end future connection shown, notes updated	Updated & added Notes	2	Drawing revised
STD-WW-03	DRAIN AND SERVICE CONNECTION PIPEWORK	Service connection responsibility revised Concrete surround at saddle removed, table updated, 3D view added.	Updated notes	2	Drawing revised
STD-WW-04	TYPICAL SEWER / SERVICE PIPE CONNECTION	Updated connection detail and notes	Updated and added notes	2	Drawing revised
STD-WW-05	TYPICAL SERVICE LAYOUT INDICATING SEPARATION DISTANCES	Separation distances to sewers added, notes updated	Updated and added notes	2	Drawing revised
STD-WW-05A	WASRTWATER SERVICE CONNECTION VERTICAL SEPARATION DISTANCES			0	New Detail
STD-WW-06	RESTRICTIONS ON WASTEWATER INFRASTRUCTURE WORKS ADJACENT TO TREES			2	No change
STD-WW-06A	RESTRICTIONS ON NEW TREES/SHRUBS PLANTING ADJACENT TO SEWERS	Text revised	Updated notes	1	Drawing revised
STD-WW-07	TRENCH BACKFILL & BEDDING	Modified trench width table, updated notes 5 and note 9 revised re marker tape	Updated Notes	2	Drawing revised
STD-WW-08	CONCRETE PROTECTION SLAB, BED, HAUNCH, AND SURROUND TO WASTEWATER PIPES	Protection slab detail added and notes updated, title updated	Updated & added Notes	1	Drawing revised
STD-WW-09	BLOCKWORK MANHOLE (<450mm DIA.)	Bedding mortar notes revised and notes updated	Updated & added Notes	3	Drawing revised
STD-WW-10	PRE-CAST CONCRETE MANHOLE WITH CAST IN-SITU BASE	Title changed and notes updated	Updated & added Notes	3	Drawing revised
STD-WW-10A	PRE-CAST CONCRETE MANHOLE WITH PRE-CAST BASE			0	New Detail
STD-WW-10B	PRE-CAST CONCRETE PUMPING STATION INLET MANHOLE WITH CAST IN-SITU CONCRETE BASE			0	New Detail
STD-WW-10C	PRE-CAST CONCRETE PUMPING STATION INLET MANHOLE WITH PRE-CAST CONCRETE BASE			0	New Detail
STD-WW-11	IN-SITU CONCRETE MANHOLE	Manhole cover size, bedding, and brick coursing notes revised	Updated & added Notes	3	Drawing revised
STD-WW-11A	CAST IN-SITU CONCRETE PUMPING STATION INLET MANHOLE			0	New Detail
STD-WW-12	BACKDROP AND CASCADE MANHOLES	Cascade manhole type 4 added, rodding eye end cap detail added and notes updated	Updated & added Notes	3	Drawing revised
STD-WW-13	PRIVATE SIDE INSPECTION CHAMBER	Added flexible material Inspection Chamber detail and updated notes	Updated & added Notes	3	Drawing revised
STD-WW-14	THRUST BLOCKS FOR RISING MAINS	Notes updated	Note 11 updated	2	Drawing revised
STD-WW-15	SCOUR VALVE CHAMBER (FOUL RISING MAIN ≤200mm DIA.)	Manhole cover bedding, and brick coursing notes revised	Updated & notes revised	3	Drawing revised
STD-WW-16	SLUICE VALVE DETAILS FOR RISING MAINS DUCTILE IRON (D.I.) PIPE (≤200mm DIA.) (Sheet 1 of 2)	Added anti-torque support note, brickwork bedding mortar spec, added plan dimensions and updated notes	Updated & notes revised	4	Drawing revised
STD-WW-17	SLUICE VALVE DETAILS FOR RISING MAINS POLYETHYLENE (P.E.) PIPE (≤200mm DIA.) (Sheet 2 of 2)	Added anti-torque support note, brickwork bedding mortar spec, added plan dimensions and updated notes	Updated & notes revised	3	Drawing revised
STD-WW-18	AIR VALVE CHAMBER (FOUL RISING MAIN <200mm DIA.)	Updated brickwork bedding mortar spec, precast option added, and updated notes	Updated & notes revised	3	Drawing revised
STD-WW-19	DUCT CHAMBER	Included drain point, updated cover bedding spec / brickwork notes and updated notes	Updated & notes revised	3	Drawing revised
STD-WW-20	EMERGENCY OVERFLOW STRUCTURE & EMERGENCY OVERFLOW TO STORM SEWER	Updated title, added emergency overflow to storm sewer detail, updated notes	Updated & notes revised	2	Drawing revised
STD-WW-21	TYPICAL DITCH/STREAM CROSSING FOR GRAVITY SEWER (Sheet 1 of 2)	Pipe materials added, notes updated	Updated	2	Drawing revised
STD-WW-22	TYPICAL DITCH/STREAM CROSSING FOR RISING MAIN (Sheet 2 of 2)	PE details added, notes added	Updated	2	Drawing revised
STD-WW-22A	TYPICAL DITCH/STREAM CROSSING FOR POLYETHYLENE RISING MAIN			0	New Detail
STD-WW-23	TYPICAL BRIDGE CROSSING FOR RISING MAIN (Sheet 1 of 2)	PE details added, scour chamber relocated	Updated	2	Drawing revised
STD-WW-24	TYPICAL BRIDGE CROSSING FOR RISING MAIN (Sheet 2 of 2)	PE details added	Updated	2	Drawing revised
STD-WW-24A	TYPICAL CULVERT AND SERVICES CROSSING DETAILS FOR RISING MAIN			0	New Detail
STD-WW-25	SECURITY GATE & FENCING PALISADE OPTION (PREFERRED)	New drawing content		0	New Detail
STD-WW-25A	SECURITY GATE & FENCING WIRE MESH OPTION	Previous STD-WW-25 renumbered and updated, infill mesh updated	Updated & notes revised	3	Drawing revised
STD-WW-26	INDICATIVE PUMPING STATION SITE LAYOUT ACCESS VIA LAY-BY	Site layout modified, notes updated	Updated & notes revised	1	Drawing revised
STD-WW-26A	INDICATIVE PUMPING STATION SITE LAYOUT DIRECT ACCESS FROM PUBLIC ROAD			0	New Detail
STD-WW-27	FLOW METER CHAMBER (FOUL RISING MAIN ≤200mm DIA.) CAST IN-SITU CONCRETE OPTION	Chamber sizes revised, notes added, spool piece length table added, notes revised	Updated & notes revised	3	Drawing revised
STD-WW-27A	FLOW METER & VALVE CHAMBER (FOUL RISING MAIN ≤200mm DIA.) CAST IN-SITU CONCRETE OPTION			0	New Detail
STD-WW-27B	FLOW METER CHAMBER (FOUL RISING MAIN ≤200mm DIA.) PRECAST CONCRETE OPTION			0	New Detail
STD-WW-27C	FLOW METER & VALVE CHAMBER (FOUL RISING MAIN ≤200mm DIA.) PRECAST CONCRETE OPTION			0	New Detail
STD-WW-28	CAST IN-SITU INDICATIVE SUBMERSIBLE PUMPING STATION	Pumping station layout modified	Updated	3	Drawing revised
STD-WW-28A	INDICATIVE PRE-CAST CONCRETE SUBMERSIBLE PUMPING STATION WITH CAST IN-SITU VALVE CHAMBER	Valve chamber modified, lifting davit removed , bauer fitting note added	Updated	2	Drawing revised
STD-WW-28B	INDICATIVE PRE-CAST CONCRETE SUBMERSIBLE PUMPING STATION AND PRECAST VALVE CHAMBER			0	New Detail
STD-WW-29	RISING MAIN DISCHARGE STAND OFF MANHOLE	General detail update, show benching on plan, manhole bedding, and brick coursing notes revised, vent stack notes added, rocker pipe length table added, title updated	Updated	3	Drawing revised
STD-WW-30	TYPE 1 PUMPING STATION CONTROL KIOSK	Modified kiosk dimensions, updated title, updated notes	Updated & notes revised	3	Drawing revised
STD-WW-30A	TYPE 2 AND TYPE 3 PUMPING STATION CONTROL KIOSK			0	New Detail
STD-WW-31	PUMPING STATION WET KIOSK	Modified kiosk dimensions, updated title, updated notes	Updated & notes revised	3	Drawing revised
STD-WW-31A	PUMPING STATION WET KIOSK WATER SERVICE CONNECTION ARRANGEMENT			0	New Detail
STD-WW-32	HARDSTANDING AREA PUMPING STATION (PERMEABLE & IMPERMEABLE)	Material depths modified, permeable area detail extended, drainage detail added	Updated	2	Drawing revised
STD-WW-33	LAMP BOLLARD & LAMP STANDARD	Cable ducting to lamp bollard revised	Updated	2	Drawing revised
STD-WW-34	VENT STACK	General presentation update, stack height reduced, passive odour control filter unit note added.	Updated	2	Drawing revised
STD-WW-35	RISING MAIN RODDING CHAMBER IN-SITU CONCRETE OPTION			0	New Detail
STD-WW-35A	RISING MAIN RODDING CHAMBER PRE-CAST CONCRETE OPTION			0	New Detail
STD-WW-36	MARKER POSTS/PLATES			0	New Detail
STD-WW-37	Section showing wastewater services separation details in high density developments 2.5m wide footpaths with 6.0m wide carriageway			0	New Detail
STD-WW-38	Layout plan showing below ground services separation details in high density developments 2.5m wide footpaths with 6.0m wide carriageway			0	New Detail
STD-WW-39	Section showing wastewater services separation details in high density developments 1.8m wide footpaths, 2.5m wide parallel parking bays with 6.0m wide carriageway.			0	New Detail
STD-WW-40	Layout plan showing below ground services separation details in high density developments 1.8m wide footpaths, 2.5m wide parallel parking bays with 6.0m wide carriageway.			0	New Detail
/	INDEX SHEET	Inclusion of STD-WW-05A, 10A, 12A, 22A, 24A, 25A, 26A, 27A, 27B, 28B, 30A, 31A, 35, 35A, 36	Drawing revisions updated	July 2020	Drawing revisions updated
/	Design Risk Assessment for Wastewater Standard Details	Inclusion of STD-WW-06A	General Amendments	v4.01	Document revised