

# Irish Water

## Connection and Developer Services

### **Wastewater Infrastructure Standard Details**

Document Number: IW-CDS-5030-01

August 2016



## Background

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

These standard details have been developed to provide guidance to developers in 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 guidance 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 35 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.

# Standard Details for Wastewater Networks

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STD-WW-32	Hardstanding area pumping station (permeable & impermeable)	0
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These Standard Details show the acceptable typical details and provide guidance on 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 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.

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These Standard Details shall be used in conjunction with current Irish Water specifications, design & construction guidance documents, etc., which will take precedence over the Standard Details.

These Standard Details may also be used for the installation of wastewater infrastructure for Minor Works & Major Works Programmes at the discretion of Irish Water.

AUG. 2016

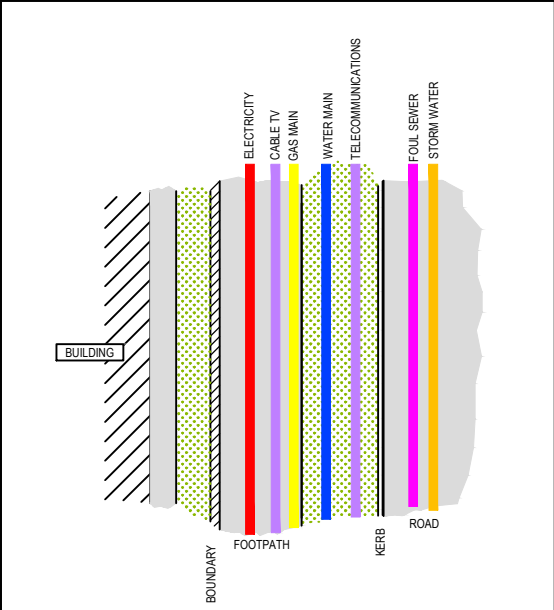


1. THE MINIMUM SIZE FOR A GRAVITY FOUL SERVICE CONNECTION SHALL BE 100mm DIAMETER.
2. THE MINIMUM SIZE OF GRAVITY FOUL SEWER SHALL BE 225mm DIAMETER IN GENERAL. GRAVITY SEWERS ON BRANCHES SERVING LESS THAN 10 PROPERTIES MAY BE 150mm DIAMETER SUBJECT TO AGREEMENT WITH IRISH WATER.
3. THE MINIMUM SIZE 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.



**LEGEND**

- PROPOSED SEWER
- PROPOSED MANHOLE
- PROPOSED INSPECTION CHAMBER
- EXISTING SEWER
- EXISTING MANHOLE



**TYPICAL LAYOUT OF SERVICES IN FOOTPATH / ROAD**

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

**STANDARD DETAILS - WASTEWATER**

SCALE: NOT TO SCALE  
DATE: SEPT. 2015

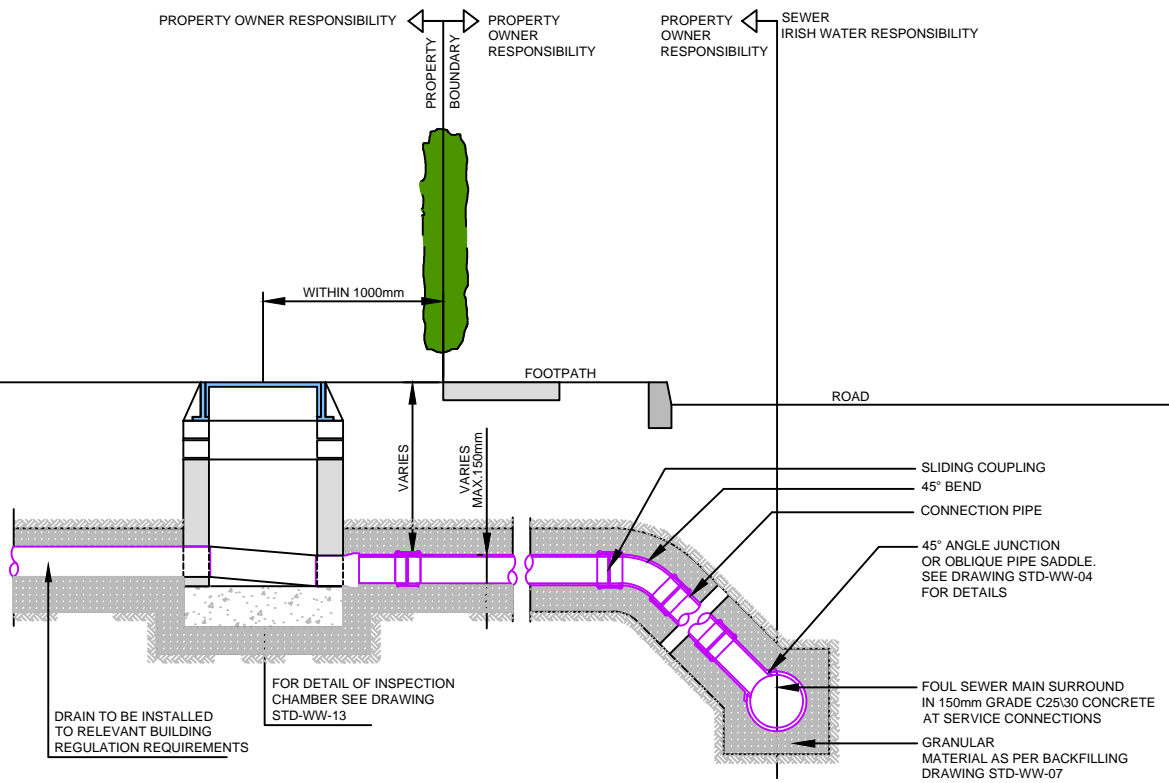
TITLE: TYPICAL LAYOUT FOR SEWER WITHIN NEW DEVELOPMENTS

DRAWING No.: STD-WW-02  
REV: 0



0	09/15	JMCTOC	Initial Issue	SL
No.	Date	Drn	Chk	Description
				App

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.
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.



PIPE SIZE (mm)	GRADIENT
100	1 : 60
150 TO 225	1 : 150 MINIMUM

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

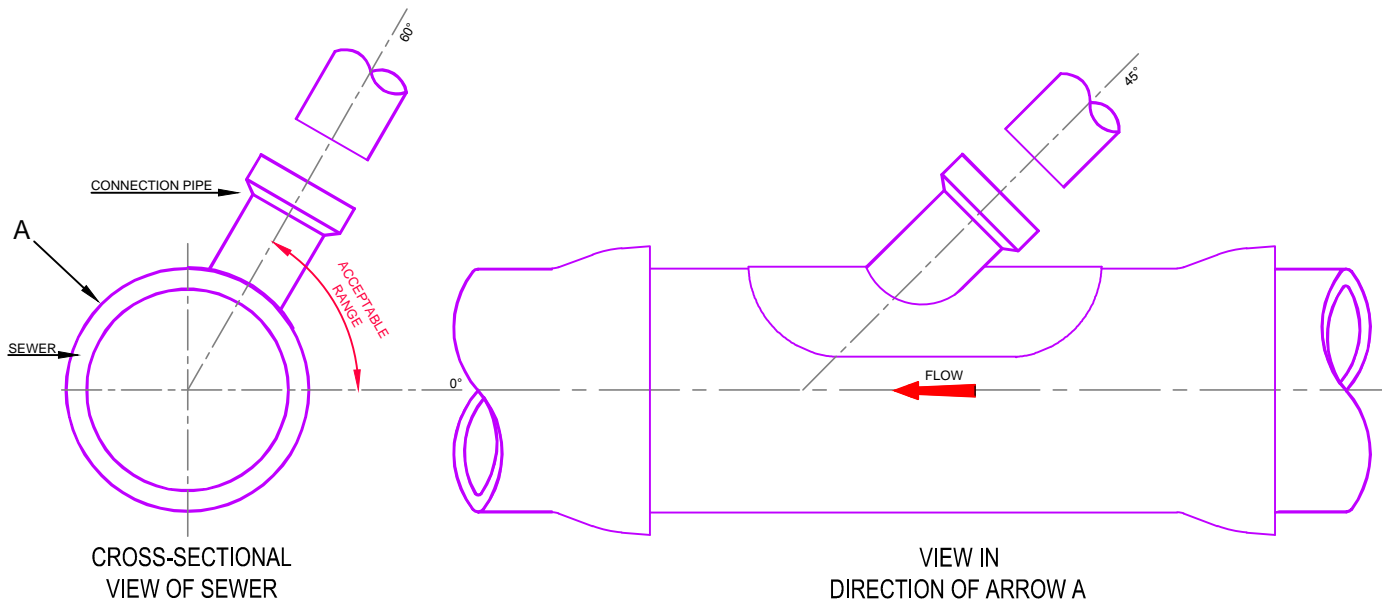


0	09/15	JMCTOC		Initial Issue	SL
No.	Date	Drn	Chk	Description	App

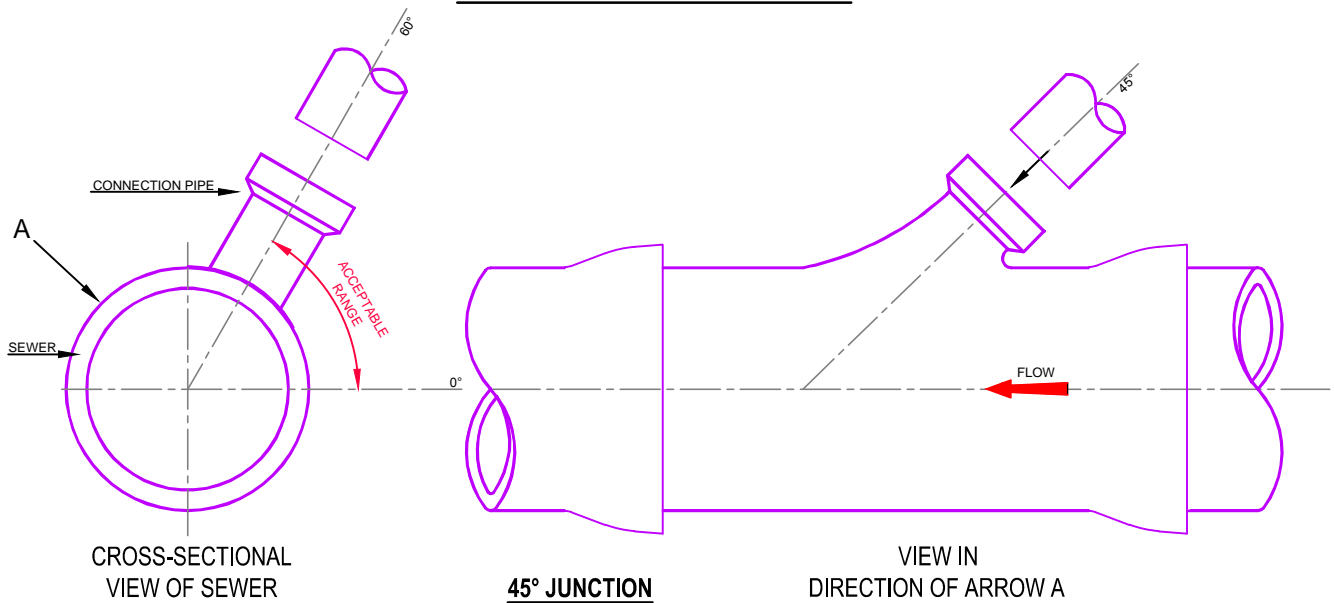
<b>STANDARD DETAILS - WASTEWATER</b>	
TITLE	
<b>DRAIN AND SERVICE CONNECTION PIPEWORK</b>	

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. <b>STD-WW-03</b>	REV <b>0</b>

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 SEWER TO THE INSPECTION CHAMBER, INSTALL THE INSPECTION CHAMBER AND SEAL THE UPSTREAM END UNTIL THE CONNECTION IS REQUIRED.
3. THE VERTICAL ANGLE BETWEEN THE SERVICE CONNECTING PIPE AND THE HORIZONTAL SHALL BE GREATER THAN 0° AND NOT MORE THAN 60°.
4. WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER OF 300mm DIAMETER OR LESS, 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 :
  - A) IF THE DIAMETER OF THE CONNECTING PIPE IS GREATER THAN HALF THE DIAMETER OF THE SEWER, AN ACCESS MANHOLE SHALL BE CONSTRUCTED TO FORM THE CONNECTION POINT, OR,
  - B) IF THE DIAMETER OF THE CONNECTING PIPE IS LESS THAN OR EQUAL TO HALF THE DIAMETER OF THE SEWER, THEN THE CONNECTION SHALL BE MADE USING A PREFORMED SADDLE FITTING WITH A SLOW BEND BETWEEN THE SADDLE AND THE CONNECTING SEWER/DRAIN .
6. CONNECTIONS MADE WITH SADDLE FITTINGS SHALL BE MADE BY CUTTING AND SAFELY REMOVING A CORE FROM THE PIPE AND JOINING THE SADDLE FITTING TO THE PIPE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO ENSURE A WATERTIGHT JOINT. THE CONNECTING PIPE SHALL NOT PROTRUDE INTO THE SEWERS.



**APPROVED 45° SADDLE CONNECTION**



**45° JUNCTION**

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



0	09/15	JM	TOC	Initial Issue	SL
No.	Date	Drn	Chk	Description	App

<b>STANDARD DETAILS - WASTEWATER</b>	
TITLE <b>TYPICAL SEWER / SERVICE PIPE CONNECTION</b>	

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. <b>STD-WW-04</b>	REV <b>0</b>

1. THE SEPARATION DISTANCES OUTLINED ARE MINIMUM REQUIREMENTS.
2. 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.
3. NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN THE FOLLOWING DISTANCES FROM AN EXISTING WATER MAIN OR WASTEWATER RISING MAIN:-

**HORIZONTAL**

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

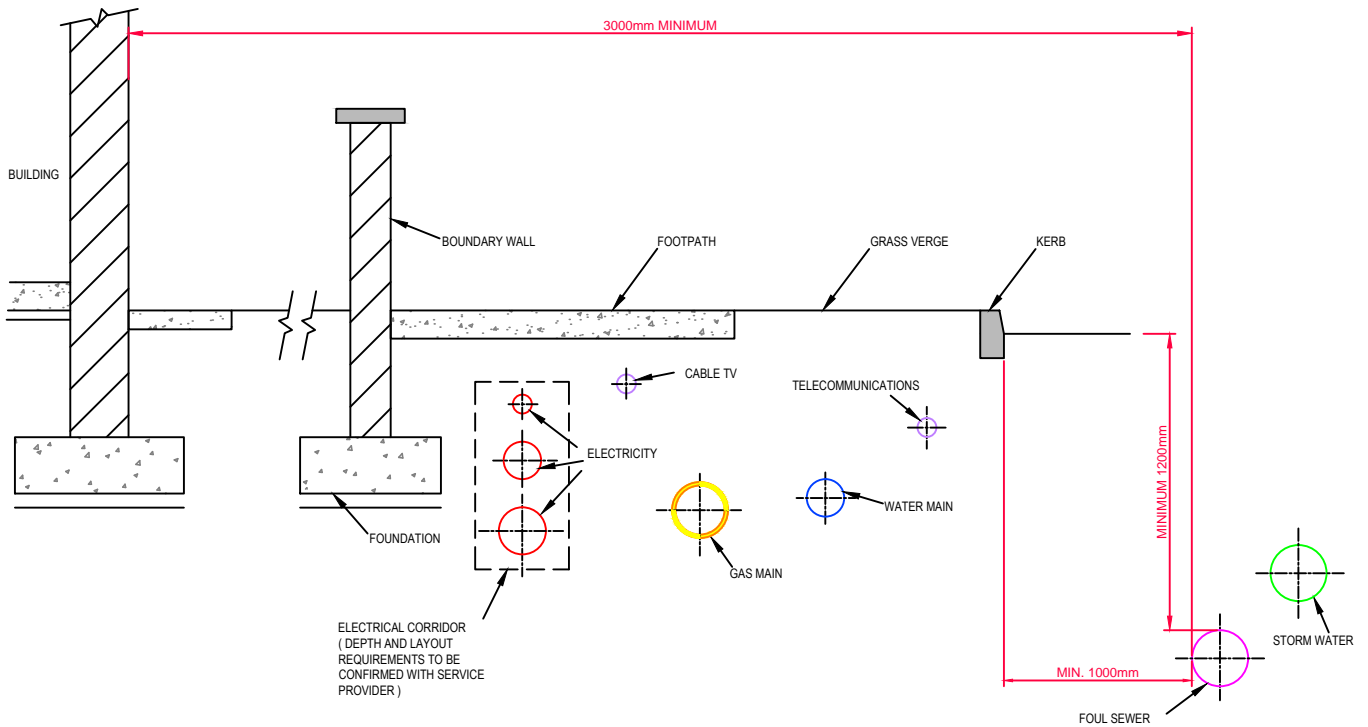
NOTIFICATION IN WRITING IS REQUIRED SHOULD WORKS BE WITHIN 1.5m DISTANCE OF A WASTEWATER SEWER.

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).

4. 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 APPROVAL 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.
5. 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.
6. 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.
7. THE MINIMUM CLEAR DISTANCE WILL BE INCREASED IF THE SEWER IS GREATER THAN 3m DEEP OR IF THE DIAMETER IS GREATER THAN 375mm. THE MINIMUM CLEAR DISTANCE IN THESE SITUATIONS SHALL BE > DEPTH TO INVERT OR 10 TIMES THE SEWER DIAMETER, WHICH EVER IS GREATER.
8. THE EXTERNAL FACES OF MANHOLE SHALL BE AT LEAST 0.5m FROM KERB LINE.
9. WHERE DESIGN DEVIATES FROM TYPICAL DETAILS, THE LAYOUT IS SUBJECT TO APPROVAL OF IRISH WATER.



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



0	09/15	JM	TOC	Initial Issue	SL
No.	Date	Drn	Chk	Description	App

<b>STANDARD DETAILS - WASTEWATER</b>	
TITLE	<b>TYPICAL SERVICE LAYOUT INDICATING SEPARATION DISTANCES</b>

SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
<b>STD-WW-05</b>	<b>0</b>



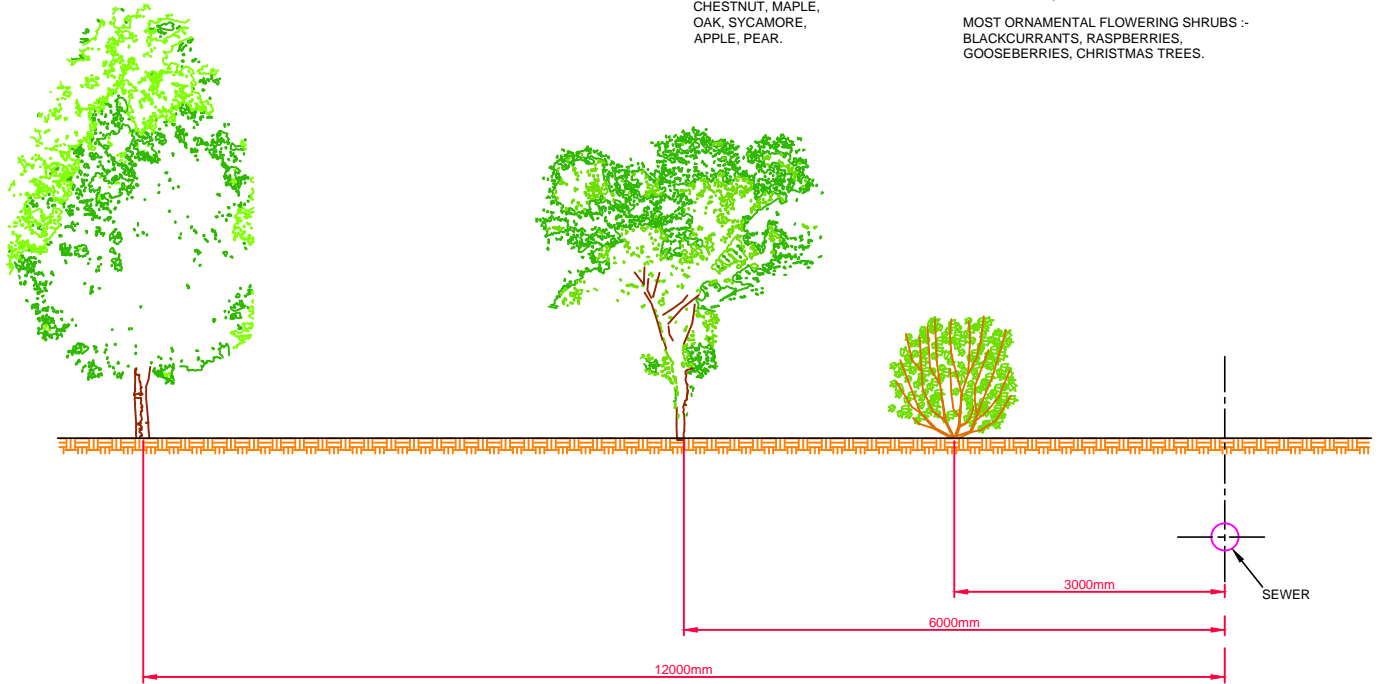
**NOTE: OTHER SPECIES NOT NAMED TO BE PLANTED TO THE SAME SPACINGS DEPENDING ON ROOT FORMATION.**

**SHRUB BUSHES FOR SCREENING :-**  
BLACKTHORN, BROOM, COTONEASTER, ELDER, HAZEL, LAUREL, PRIVET, QUICKTHORN, SNOWBERRY.

**MOST ORNAMENTAL FLOWERING SHRUBS :-**  
BLACKCURRANTS, RASPBERRIES, GOOSEBERRIES, CHRISTMAS TREES.

POPLAR, WILLOW.

ASH, BEECH, BIRCH, CONIFER, ELM, CHESTNUT, MAPLE, OAK, SYCAMORE, APPLE, PEAR.

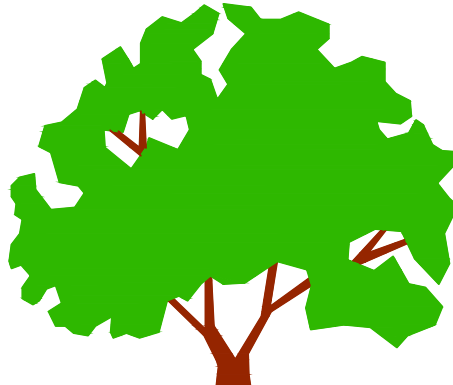


**NOTE: RESTRICTIONS RELATE TO INFRASTRUCTURE WITHOUT ROOT INTRUSION PROTECTION.**

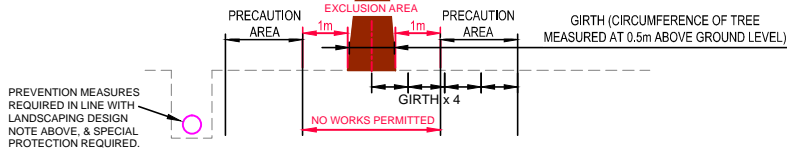
THE DESIGN OF LANDSCAPING SHALL BE UNDERTAKEN IN CONJUNCTION WITH THE DESIGN OF SEWERS, DRAINS, ETC. THE SEWER/DRAIN SHALL NOT BE LOCATED CLOSER TO THE TREE/BUSH/SHRUB THAN INDICATED ABOVE, EXCEPT WHERE SPECIAL PROTECTION MEASURES ARE PROVIDED. WHERE THERE IS A RISK OF TREE/ROOT INTRUSION, THE SEWER/DRAIN 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). A TREE SHALL NOT BE PLANTED DIRECTLY OVER SEWERS/DRAINS WHERE EXCAVATION OF THE INFRASTRUCTURE WOULD REQUIRE REMOVAL OF THE TREE. ONLY SHALLOW ROOTING SHRUBS SHALL BE PLANTED CLOSE TO SEWERS/DRAINS.

## NEW PLANTING

**PRECAUTION AREA:**  
EXCAVATIONS FOR PIPEWORK SHOULD NOT BE UNDERTAKEN WITHIN THIS AREA, UNLESS AGREED WITH IRISH WATER. MATERIAL, PLANT & SPOIL SHALL NOT BE STORED WITHIN THIS ZONE.



**OUTSIDE RADIUS OF PRECAUTION AREA = 4 x GIRTH OF TREE**



## EXISTING PLANTING:

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

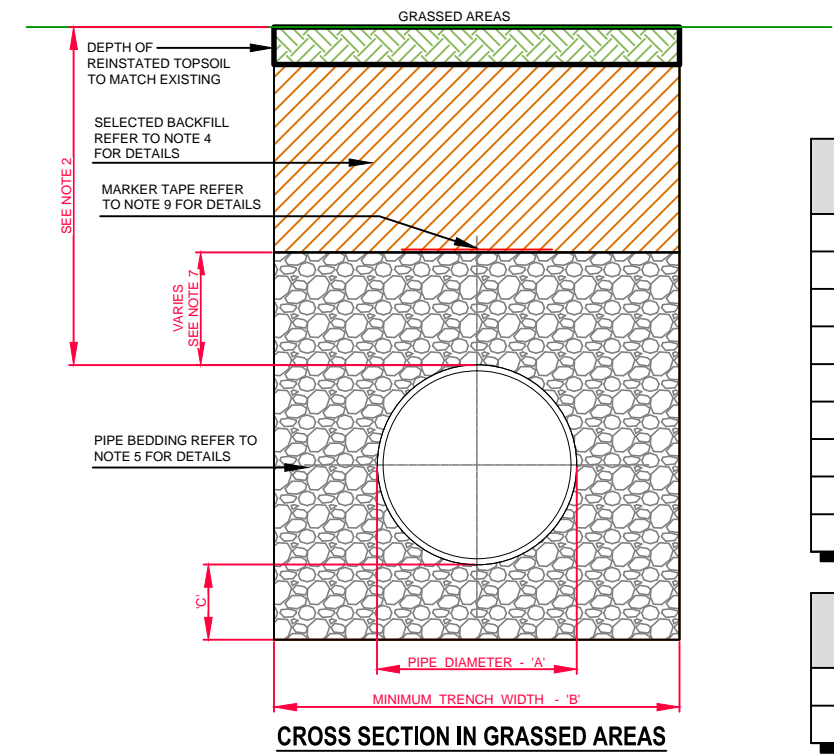
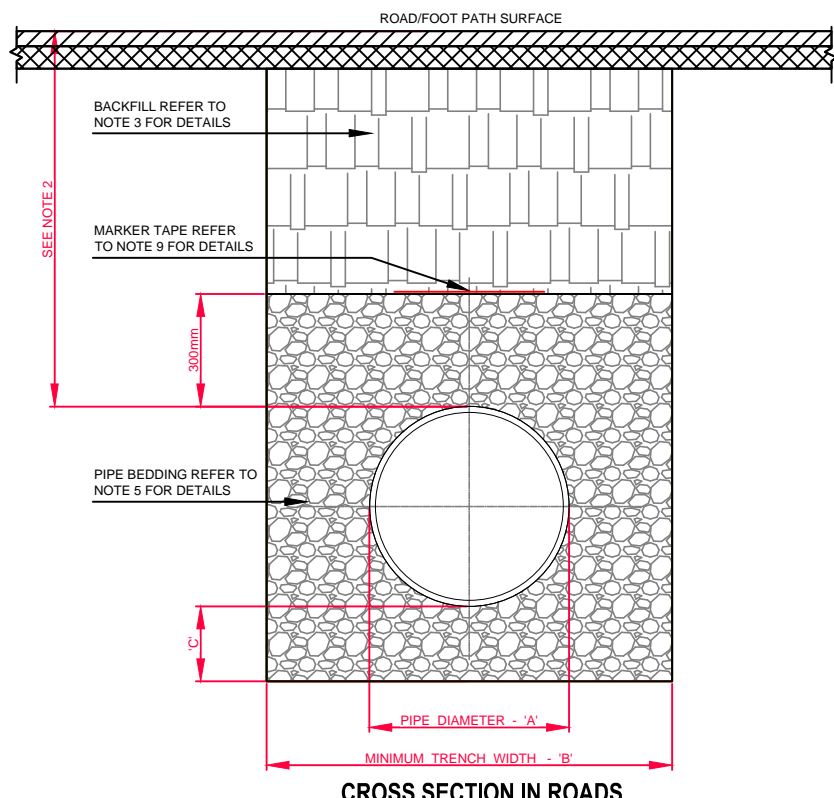


1	08/16	JMC	TOC	Added new section & notes	WOD
0	09/15	JMC	TOC	Initial Issue	SL
No.	Date	Drn	Chk	Description	App

<b>STANDARD DETAILS - WASTEWATER</b>	
TITLE	<b>RESTRICTIONS ON TREES / SHRUBS PLANTING ADJACENT TO SEWERS</b>

SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
<b>STD-WW-06</b>	<b>1</b>

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- THE MINIMUM DEPTH OF COVER FROM THE FINISHED SURFACE TO THE CROWN OF GRAVITY PIPES **WITHOUT PROTECTION** SHOULD BE AS FOLLOWS:
  - GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.5 M. (THIS WOULD NORMALLY RELATE TO DRAINS IN PRIVATE PROPERTY, SHALLOW PIPES OF THIS NATURE ARE UNDESIRABLE AND SHOULD BE INSTALLED IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS).
  - DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.75 M.
  - DRIVEWAYS, 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.
  - DEPTHS OF SEWERS IN GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
  - AGRICULTURAL LAND AND PUBLIC OPEN SPACE - DEPTH NOT LESS THAN 0.9 M.
  - OTHER HIGHWAYS AND PARKING AREAS WITH UNRESTRICTED ACCESS TO VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 1.2m.
- CLAUSE 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS IS TO BE USED AS BACKFILL MATERIAL WHERE THE SEWER MAIN IS LOCATED IN ROADS, FOOTPATHS OR WHEN THE NEAREST PART OF THE TRENCH IS WITHIN 1m OF THE PAVED EDGE OF THE ROADWAY. CLAUSE 808 IS TO BE COMPACTED AS PER CLAUSE 802 OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS.
- SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO THE APPROVAL OF IRISH WATER.
- PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE IS EN 13242. CONCRETE BED, HAUNCH & SURROUND, WHERE REQUIRED, SHALL BE TO STD-WW-08.
- IN SOFT GROUND CONDITIONS (CBR < 5) THE MATERIAL SHOULD BE EXCAVATED AND DISPOSED OF IN ACCORDANCE WITH THE WASTE MANAGEMENT ACT AND CLAUSE 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS SHALL REPLACE THE EXCAVATED MATERIAL, WRAPPED IN GEO-TEXTILE WRAPPING. ALTERNATIVELY, SPECIAL PIPE SUPPORT ARRANGEMENTS, INCLUDING PILING ETC. MAY BE REQUIRED WHERE THE DEPTH OF SOFT MATERIAL IS EXCESSIVE. SUCH ARRANGEMENTS SHALL BE SUBJECT TO ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORK.
- IN GREEN FIELD AREAS, TYPE B BACKFILL (SELECTED EXCAVATED MATERIAL) WILL BE ALLOWED ABOVE THE SIDE HAUNCH GRANULAR MATERIAL IN THE CASE OF RIGID PIPES. A GRANULAR SURROUND OF A MINIMUM DEPTH OF 150mm ABOVE THE CROWN OF THE PIPE IS REQUIRED FOR FLEXIBLE PIPES, AND TYPE B MATERIAL MAY BE USED AS BACKFILL ABOVE THIS. ALL RISING MAINS IN GREENFIELD AREAS SHALL HAVE A MINIMUM COVER OF 300mm OF GRANULAR MATERIAL ABOVE THE EXTERNAL CROWN OF THE PIPE.
- PIPES SHALL NOT BE SUPPORTED ON STONES, ROCKS OR ANY HARD OBJECTS AT ANY POINT ALONG THE TRENCH. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE ACTUAL DEPTH OF THE TRENCH WITH THE VOID FILLED WITH CLAUSE 808 MATERIAL IN ACCORDANCE WITH THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS. THE GRANULAR MATERIAL SHALL BE LAID ABOVE THIS VOID BACKFILL MATERIAL.
- NON DEGRADABLE MARKER TAPE SHOULD BE INSTALLED AT TOP OF PIPE BEDDING LAYER. IN THE CASE OF NON METAL PIPE MATERIAL, THE MARKER TAPE SHOULD INCORPORATE A TRACE WIRE WHICH IS LINKED TO FITTINGS AND TERMINATED AT THE WASTE WATER PUMPING STATION AND THE DISCHARGE MANHOLE.
- TRENCH WIDTHS FOR PIPE SIZES ≤80mm MAY BE <500mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.



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

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

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



No.	Date	Drn	Chk	Description	App
0	09/15	JM	TOC	Initial Issue	SL

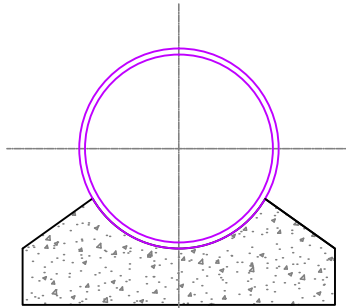
**STANDARD DETAILS - WASTEWATER**

TITLE

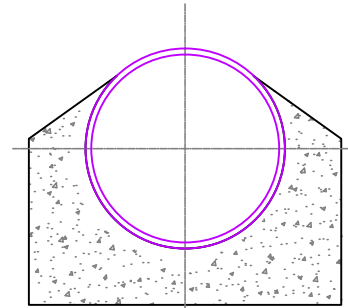
**TRENCH BACKFILL AND BEDDING**

SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
<b>STD-WW-07</b>	<b>0</b>

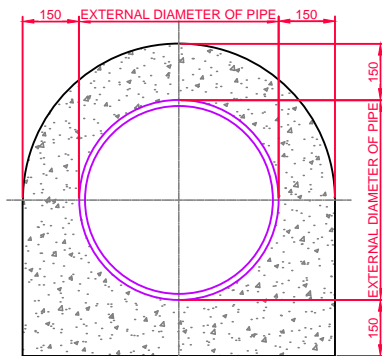
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. CONCRETE PIPE BEDS AND HAUNCHES MAY BE REQUIRED TO ADDRESS MINIMUM COVER SITUATIONS, AND SHALL BE SUBJECT TO SUBMISSION AND ASSESSMENT BY IRISH WATER BEFORE ADVANCING WITH THE WORKS.
3. CONCRETE PIPE BEDS AND HAUNCHES SHALL HAVE A MINIMUM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



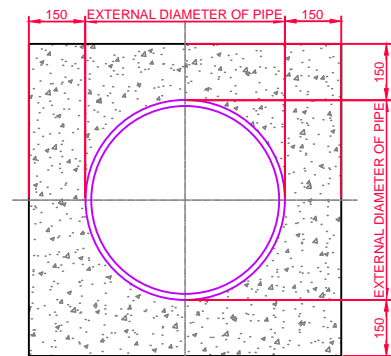
**TYPE 'A'**



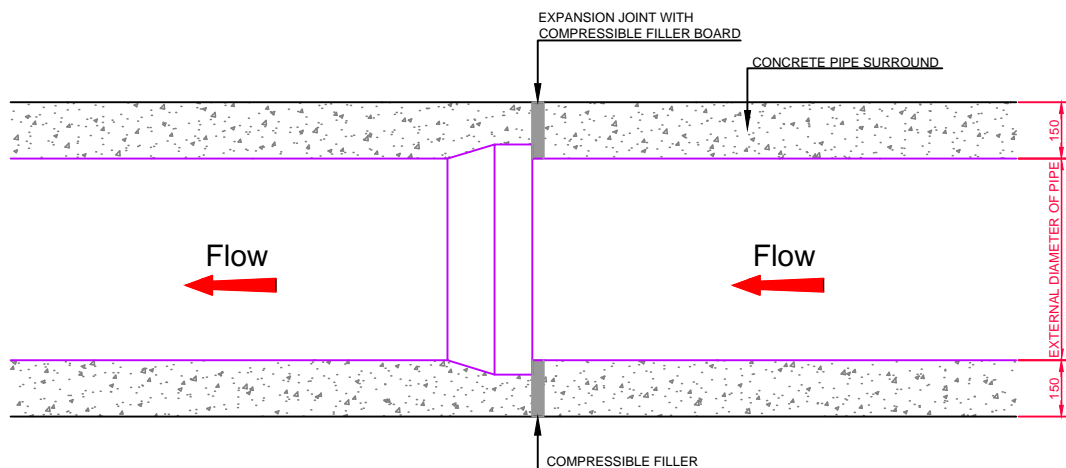
**TYPE 'B'**



**TYPE 'C'**



**TYPE 'D'**



**SPIGOT AND SOCKET JOINT**

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



No.	Date	Drn	Chk	Description	App
0	09/15	JM	TOC	Initial Issue	SL

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

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. STD-WW-08	REV 0

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

COVER TO BE SET AS PER MANUFACTURER'S SPECIFICATIONS

1 No. COURSE MIN.  
3 No. COURSES MAX OF CLASS B ENGINEERING BRICKS SET IN C50/60 MORTAR

675mm MAX. TO FIRST STEP

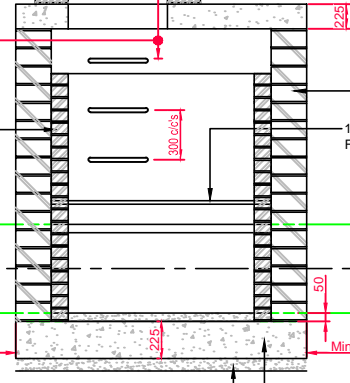
ENGINEERING BRICK WORK LINING 1000mm ABOVE BENCHING

FLEXIBLE JOINT

Flow

ROCKER PIPE (2 x DIAMETER OR 1000mm MAXIMUM)

Min. 600



**SECTION A-A**

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- SOLID BLOCKWORK TO BE OF HIGH STRENGTH (20N/mm<sup>2</sup>) TO IS EN 771.
- 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 WRITTEN APPROVAL FROM IRISH WATER).
- 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.
- COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO APPROVAL FROM IRISH WATER.
- 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND 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 APPROVAL FROM IRISH WATER.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.

20N/mm<sup>2</sup> CONCRETE BLOCKS TO COMPLY WITH IS EN 771-3

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

FLEXIBLE JOINT

Flow

ROCKER PIPE (2 x DIAMETER OR 1000mm MAXIMUM)

REINFORCED CONCRETE BASE GRADE C30/37

75mm GRADE C12/15 BLINDING CONCRETE

COVER TO BE SET AS PER MANUFACTURER'S SPECIFICATIONS

675mm MAX. TO FIRST STEP

ENGINEERING BRICK WORK LINING 1000mm ABOVE BENCHING

BENCHING SLOPE TO BE 1:10 TO 1:30

150 (MIN.)

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

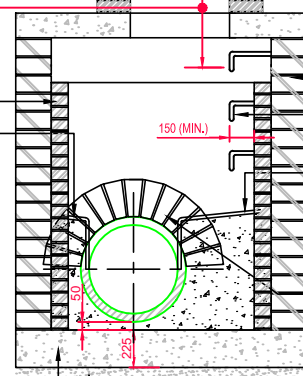
1 No. COURSE MIN.  
3 No. COURSES MAX OF CLASS B ENGINEERING BRICKS SET IN C50/60 MORTAR

20N/mm<sup>2</sup> CONCRETE BLOCKS TO COMPLY WITH IS EN 771-3

MANHOLE STEPS TO COMPLY WITH IS EN 13101, TYPE D, CLASS 1, GALVANISED MILD STEEL & PLASTIC ENCAPSULATED.

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

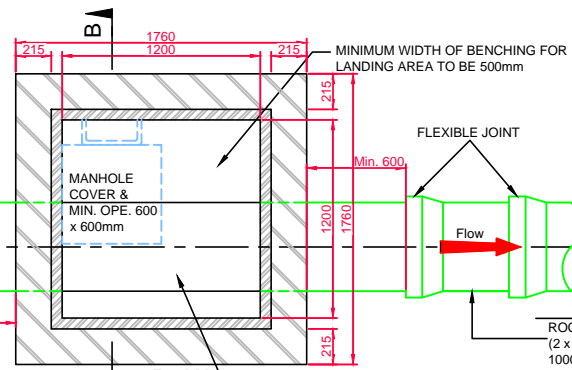
RELIEVING ARCH FORMED BY 215x103x65 SOLID ENGINEERING BRICK CLASS A OR B. (RELIEVING ARCHES USED IN BRICK OR BLOCK WORK MANHOLES EXTEND OVER FULL THICKNESS OF WALLS)



**SECTION B-B**

REINFORCED CONCRETE BASE GRADE C30/37

75mm GRADE C12/15 BLINDING CONCRETE



**PLAN**

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

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



No.	Date	Drn	Chk	Description	App
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	SCALE
BLOCKWORK MANHOLE (< 450mm DIA.)	NOT TO SCALE
	DATE
	SEPT. 2015
	DRAWING No.
	REV
	STD-WW-09
	1

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

COVER TO BE SET AS PER MANUFACTURER'S SPECIFICATION

1 No. COURSE MIN.  
3 No. COURSES MAX  
OF CLASS B  
ENGINEERING BRICKS  
SET IN C50/60 MORTAR

ELASTOMETRIC JOINT SEAL  
TO EN 681

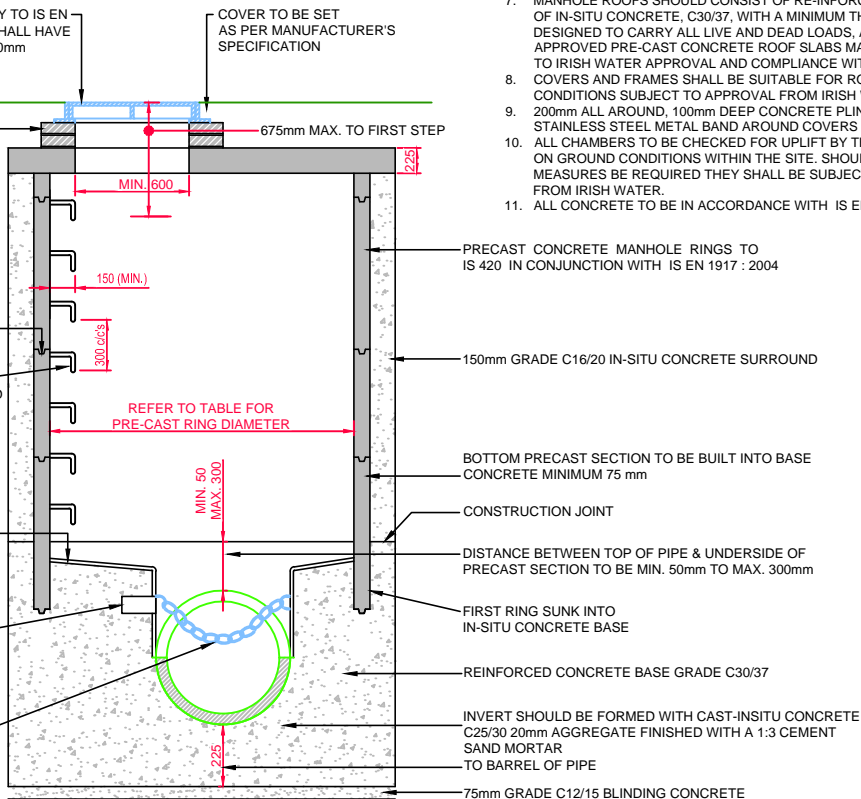
MANHOLE STEPS TO COMPLY WITH IS EN 13101, TYPE D, CLASS 1, GALVANISED MILD STEEL & PLASTIC ENCAPSULATED. STEPS ARE REQUIRED IN MANHOLES UP TO A DEPTH OF 2.5m. MANHOLE LADDERS ARE REQUIRED FOR MANHOLES WITH A DEPTH IN EXCESS OF 2.5m & ARE TO COMPLY WITH IS EN 14396 & WITH BS 4211.

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

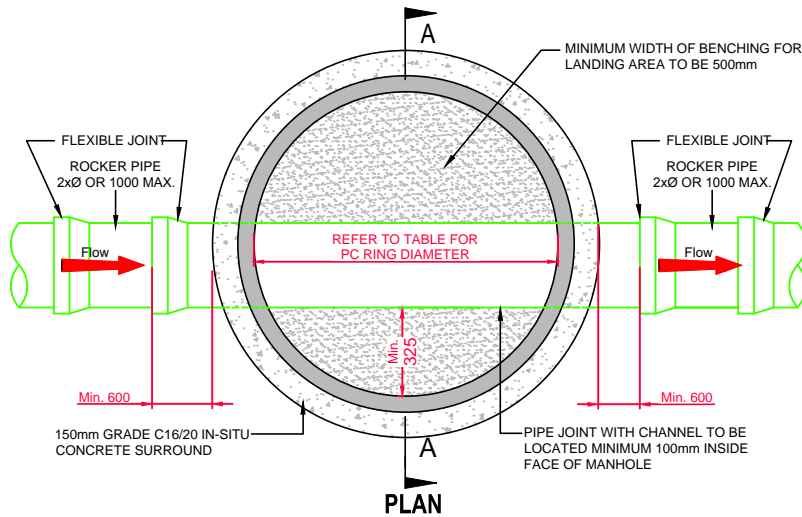
SELF CLEANING TOE HOLES TO BE PROVIDED WHERE CHANNEL EXCEEDS 600mm WIDE

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

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND BS 5911-PART 3.
3. THICKER MANHOLE BASES REQUIRED FOR SEWERS IN EXCESS OF 3m DEEP WHERE THE SIZE IS GREATER THAN THE STANDARD MINIMUM SIZE
4. APPROVED PRE-CAST CONCRETE BASES MAY BE USED INCORPORATING CHANNELS, BENCHING ETC. SUBJECT TO IRISH WATER APPROVAL AND COMPLYING WITH BS 5911-PART 4 2002.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
6. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER APPROVAL
7. MANHOLE ROOFS SHOULD CONSIST OF RE-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 APPROVAL AND COMPLIANCE WITH BS 5911 PART 4: 2002.
8. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO APPROVAL FROM IRISH WATER.
9. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
10. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
11. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.



SECTION A-A



PLAN

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

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

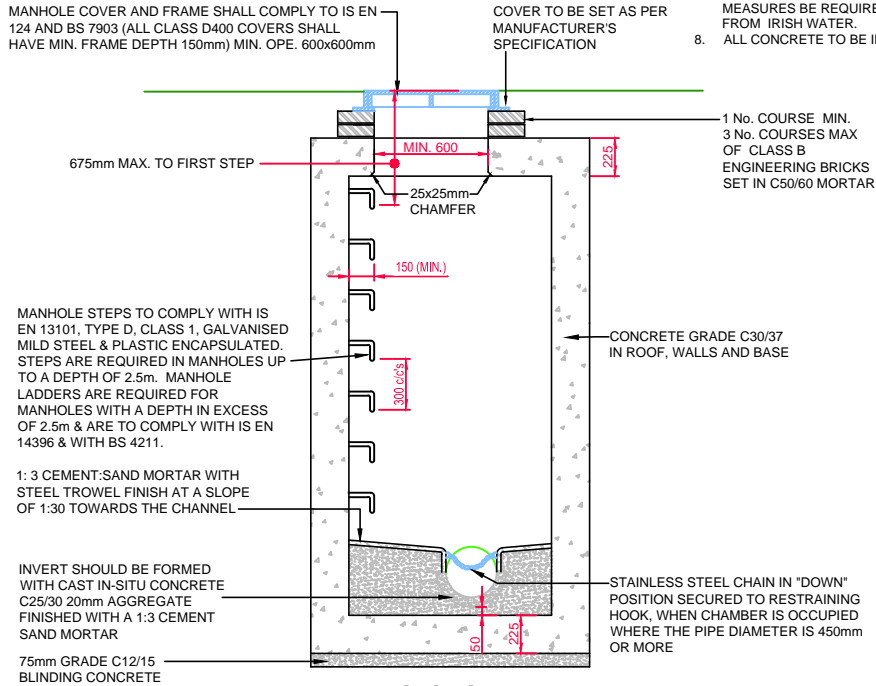


No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Added steps & revised access ope & cover notes	MOD
0	09/15	JMC	TOC	Initial Issue	SL

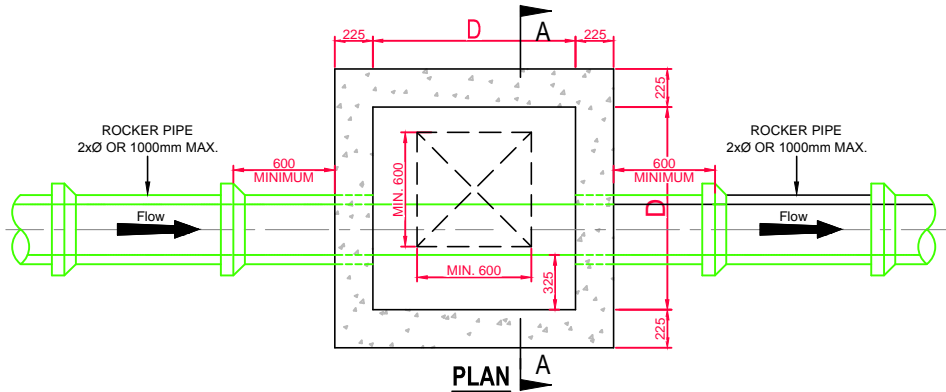
STANDARD DETAILS - WASTEWATER	
TITLE	SCALE
PRE-CAST CONCRETE MANHOLE	NOT TO SCALE

DATE	REV
SEPT. 2015	1

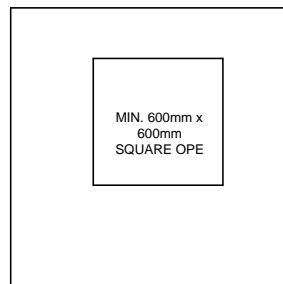
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. IN-SITU MANHOLES TO HAVE A MINIMUM WALL AND FLOOR THICKNESS OF 225mm FOR MANHOLE DEPTHS UP TO 3.0m AND 300mm OR MORE WHEN THE MANHOLE DEPTH EXCEEDS 3.0m.
3. STRUCTURAL DESIGN & REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
4. MANHOLES GREATER THAN 3m IN DEPTH WILL REQUIRE A DETAILED STRUCTURAL DESIGN AND BE SUBJECT TO IRISH WATER APPROVAL.
5. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO APPROVAL FROM IRISH WATER.
6. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
7. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
8. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.



**SECTION A-A**



**PLAN**



**ROOF PLAN**

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

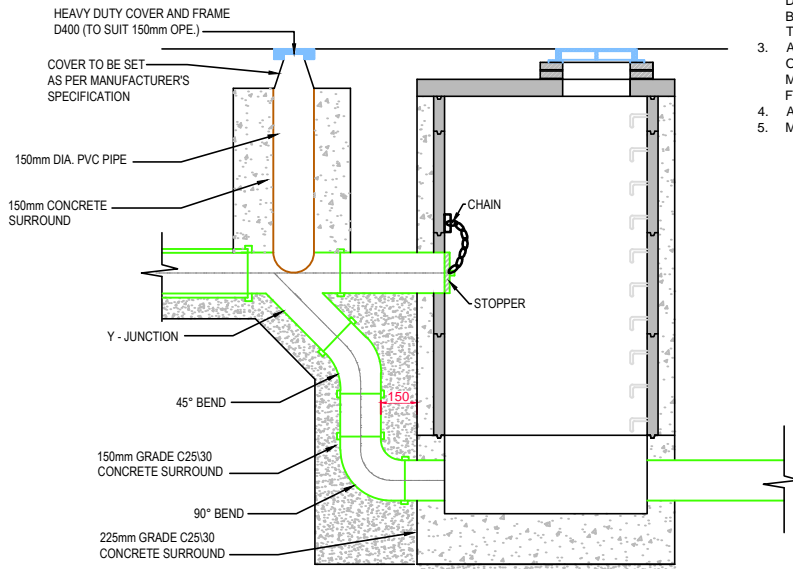
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT



No.	Date	Drn	Chk	Description	App
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	

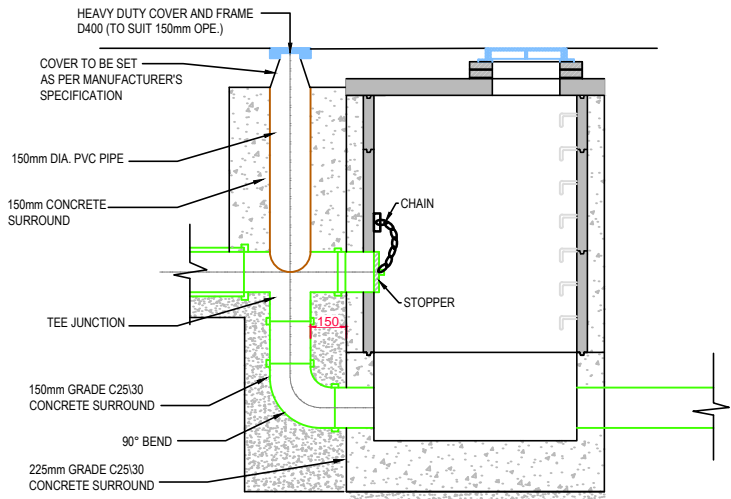
SCALE	DATE
NOT TO SCALE	SEPT. 2015
DRAWING No.	REV
STD-WW-11	1



**TYPE No. 1**

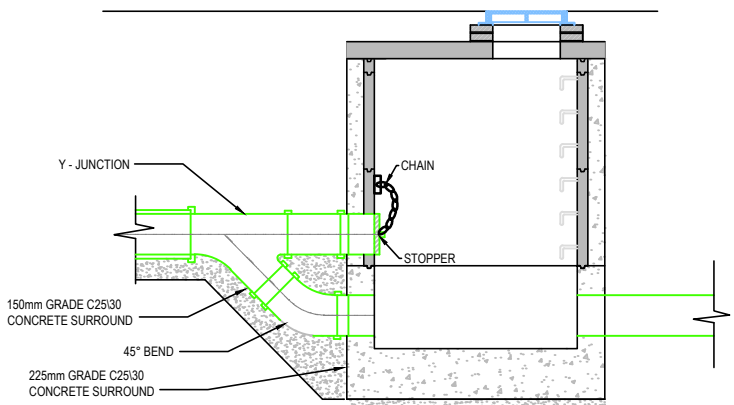
150mm - 450mm DIA. (INCL.) DROP GREATER THAN 1700mm  
 500mm - 900mm DIA. (INCL.) DROP GREATER THAN 2300mm

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. RODDING EYE CHAMBER 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 THE APPROVAL OF 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 APPROVAL FROM 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 AND 11



**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



**TYPE No. 3**

150mm - 450mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 900mm  
 500mm - 900mm DIA. (INCL.) DROP GREATER THAN 600mm AND LESS THAN 1300mm

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

**STANDARD DETAILS - WASTEWATER**

SCALE: NOT TO SCALE  
 DATE: SEPT. 2015

TITLE

**BACKDROP MANHOLES**

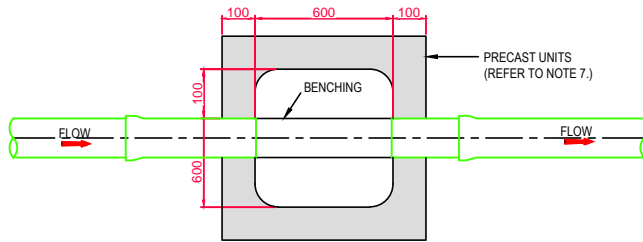
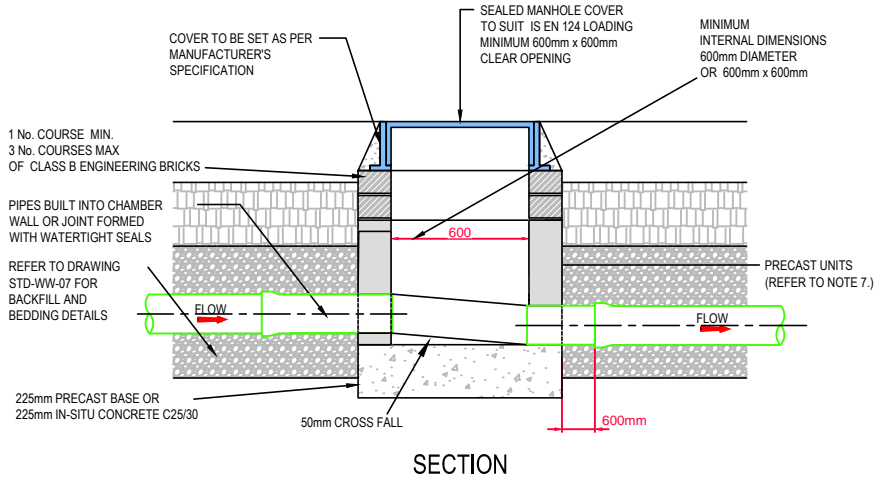
DRAWING No. REV

**STD-WW-12 1**

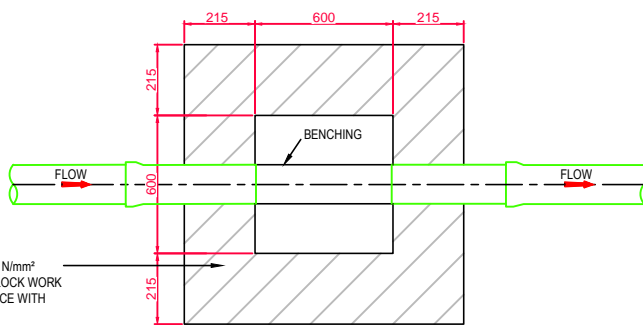
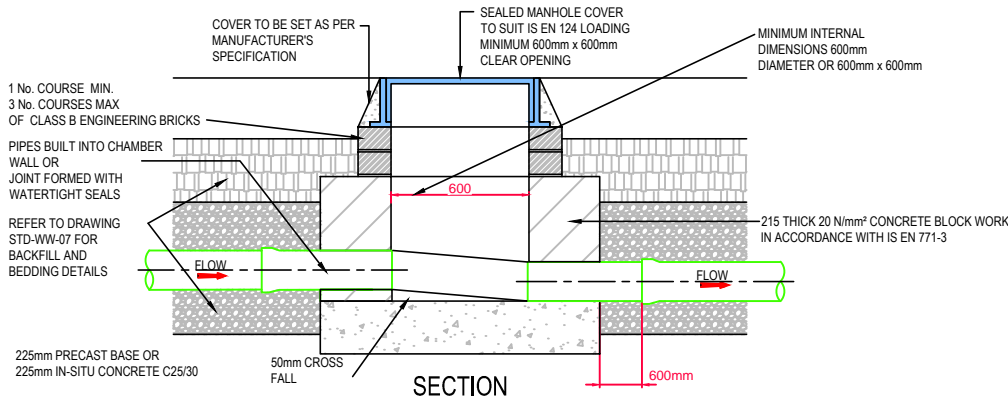


No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Added steps	MOD
0	09/15	JMC	TOC	Initial Issue	SL

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 CURTILAGE, IF PRACTICABLE.
3. ANY PIPE AND ASSOCIATED ACCESS UPSTREAM OF THE POINT OF CONNECTION TO A PUBLIC SEWER IS A PRIVATE DRAIN AND SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING REGULATIONS.
4. ACCESS POINTS SHOULD BE LOCATED SO THAT THEY ARE ACCESSIBLE AND APPARENT TO THE MAINTAINER AT ALL TIMES FOR USE. THEY SHOULD NEVER BE OVERLAIN WITH SURFACE DRESSING, TOPSOIL, ETC.
5. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO APPROVAL FROM IRISH WATER.
6. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
7. PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO APPROVAL FROM IRISH WATER.
8. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 804 OR CLAUSE 808 MATERIAL AS PER STD-WW-07.



**INSPECTION CHAMBER  
(PRECAST CONCRETE CONSTRUCTION)**

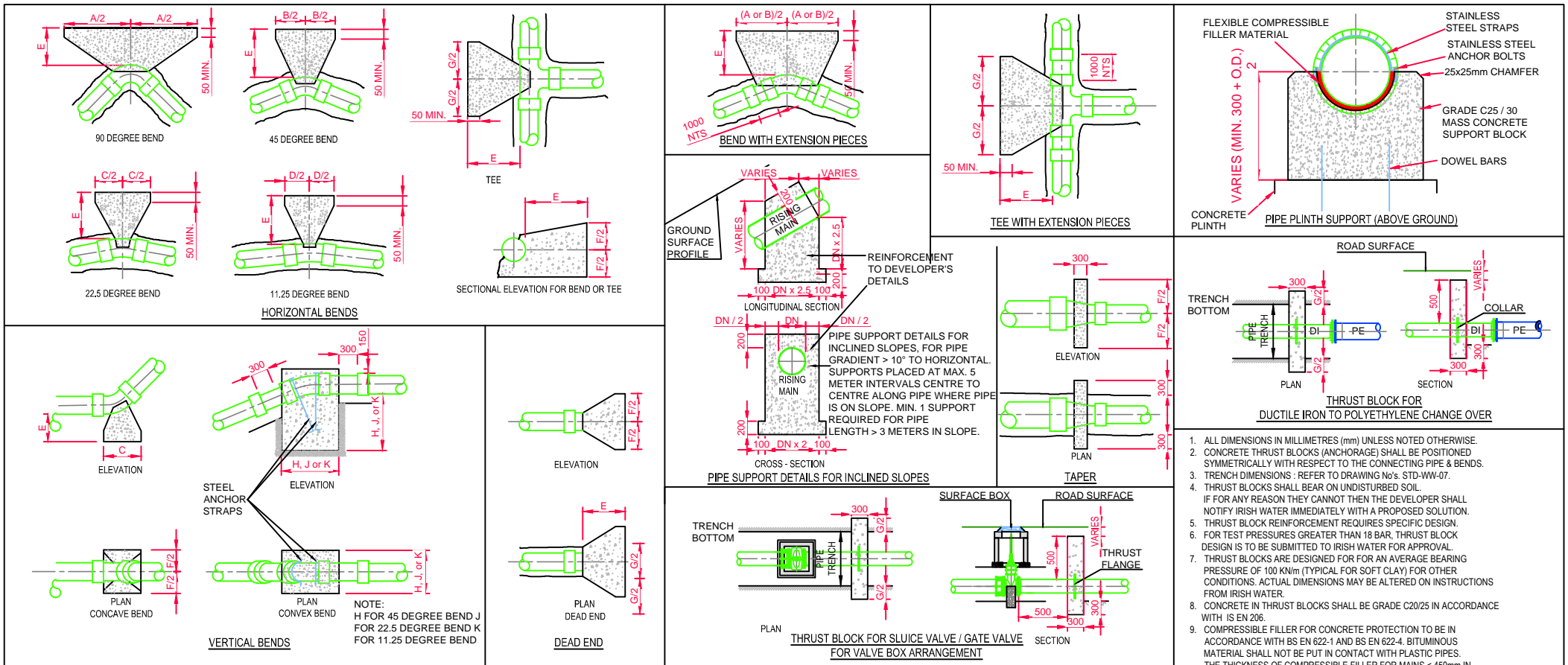


**INSPECTION CHAMBER  
(BLOCK WORK CONSTRUCTION)**

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

	STANDARD DETAILS - WASTEWATER					SCALE NOT TO SCALE	DATE SEPT. 2015
	TITLE					DRAWING No.	REV
	PRIVATE SIDE INSPECTION CHAMBER					STD-WW-13	1
	No.	Date	Drn	Chk	Description	App	
1	08/16	JMC	TOC	Added Cl. 808 to note 8	MOD		
0	09/15	JMC	TOC	Initial Issue	SL		





**< 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	260	130	225	450	660	900	750	600
200	1150	600	310	180	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	1500	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	2880	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	760	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

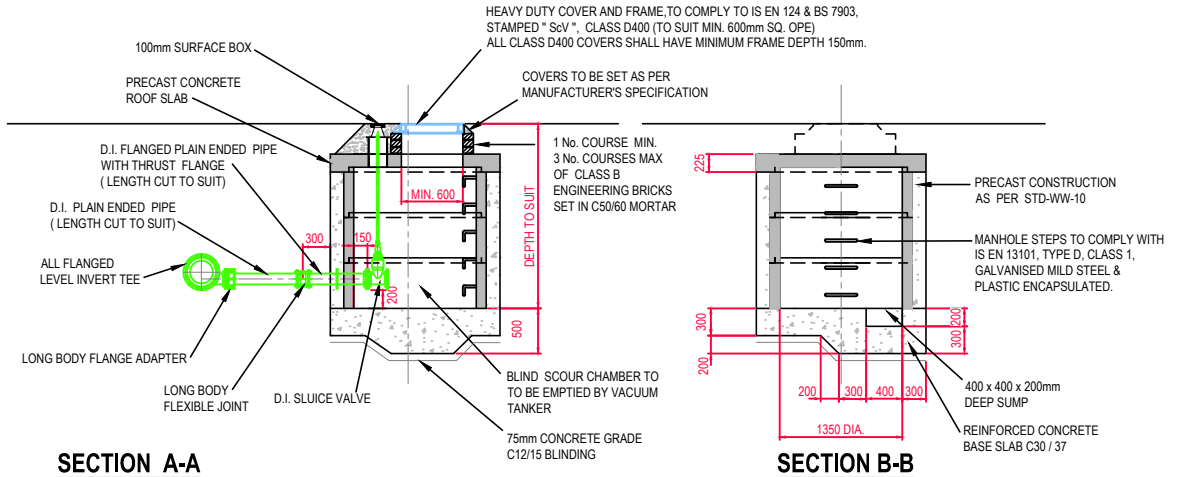
**15 BAR TO 18 BAR TEST PRESSURE**

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*	1780	890	1000	1500	4500*	2400	2050	1650

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

						STANDARD DETAILS - WASTEWATER		SCALE NOT TO SCALE	DATE SEPT. 2015
						TITLE		THRUST BLOCKS FOR RISING MAINS	
						DRAWING No.			
						09/15 JMC TOC Initial Issue		STD-WW- 14	
No.	Date	Dm	Chk	Description	App				

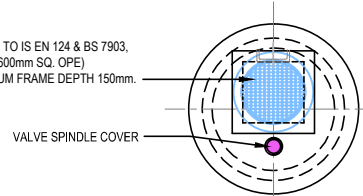
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. VALVE SURFACE BOX TO BE IN ACCORDANCE WITH IS 261 OR BS 5834. SCOUR CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS EN 124 RATING D400. COVERS AND FRAMES SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS SUBJECT TO APPROVAL FROM 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 MARKING.
4. SCOUR CHAMBER TO BE IN ACCORDANCE WITH BS EN 1992-3.
5. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
6. 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.
7. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
8. ANTI CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
9. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
10. ALL DUCTILE IRON PIPEWORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
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 APPROVAL FROM IRISH WATER.



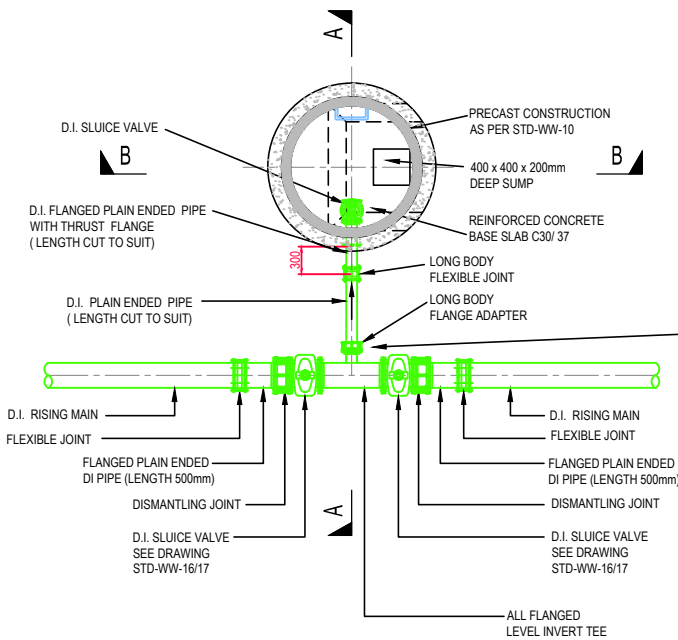
**SECTION A-A**

**SECTION B-B**

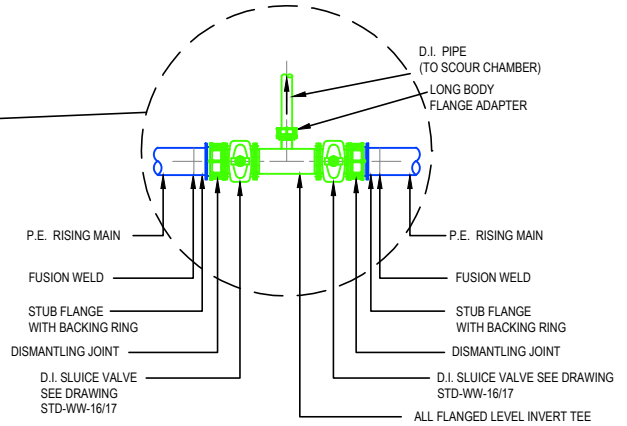
HEAVY DUTY COVER AND FRAME, TO COMPLY TO IS EN 124 & BS 7903, STAMPED "ScV", CLASS D400 (TO SUIT MIN. 600mm SQ. OPE) ALL CLASS D400 COVERS SHALL HAVE MINIMUM FRAME DEPTH 150mm.



**SCOUR CHAMBER ROOF PLAN**



**PLAN (DUCTILE IRON RISING MAIN)**



**PLAN (POLYETHYLENE RISING MAIN)**

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

**STANDARD DETAILS - WASTEWATER**

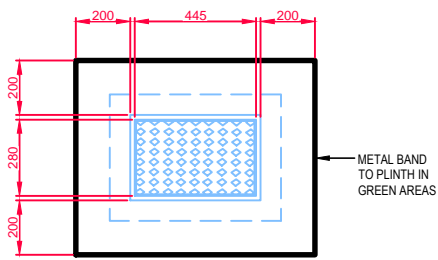
SCALE: NOT TO SCALE  
DATE: SEPT. 2015

TITLE: SCOUR VALVE CHAMBER  
FOUL RISING MAIN (< 200mm DIA.)

DRAWING No. STD-WW-15  
REV: 1

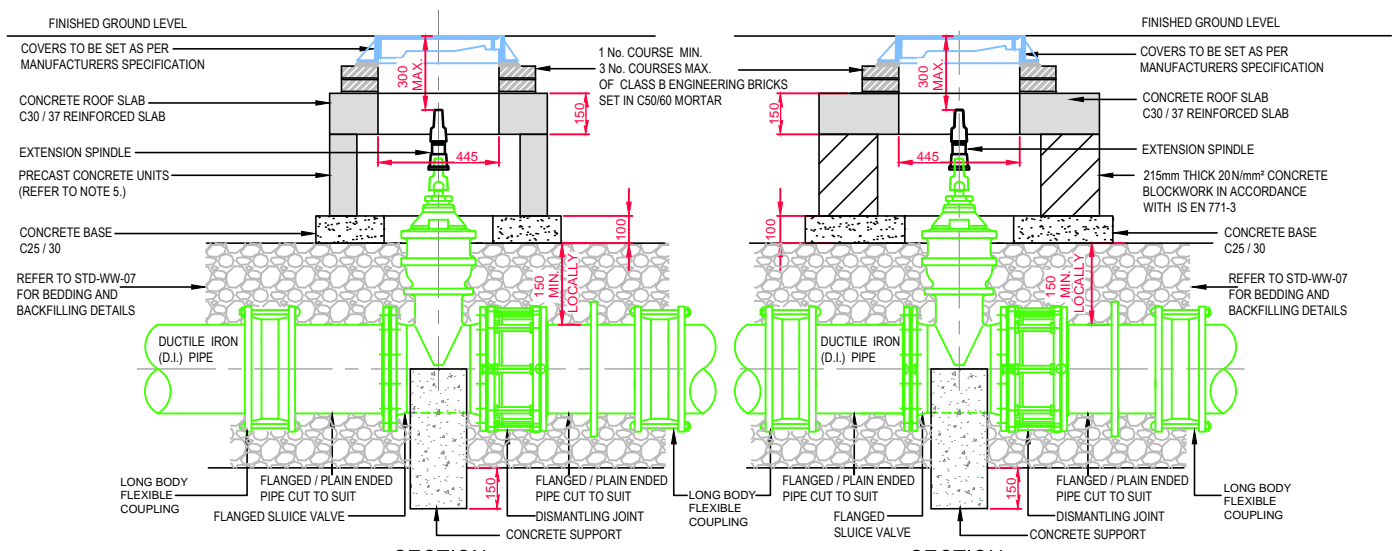


No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Added steps, revised note 2, dims, cover & ope notes.	MOD
0	09/15	JMC	TOC	Initial Issue	SL



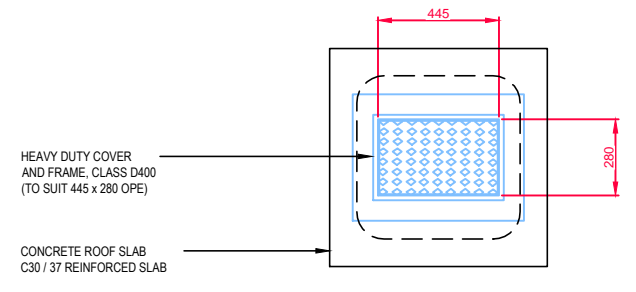
**PLINTH DETAIL  
IN GRASS AREAS**

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.
3. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO THE APPROVAL OF IRISH WATER.
4. 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.
5. ALL SLUICE VALVES SHALL BE CLOCKWISE CLOSING.
6. VALVE CHAMBER TO BE CONSTRUCTED OF PRECAST CONCRETE UNITS OR HIGH DENSITY BLOCKWORK.
7. ALTERNATIVELY PROPRIETARY PREFABRICATED CHAMBER UNITS MAY ALSO BE USED, SUBJECT TO APPROVAL FROM IRISH WATER.
8. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLAUSE 808 MATERIAL AS PER STD-WW-07.
9. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206 : 2013.
10. DUCTILE IRON PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
11. PE PIPES TO BE IN ACCORDANCE WITH IS EN 12201 : 2011.
12. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
13. 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.
14. ANTI-CORROSION TAPE TO BE PROVIDED AROUND BURIED FLANGES.
15. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE SHOULD ANTI FLOATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
16. ALL THRUST FLANGES TO BE ADEQUATELY RESTRAINED BY THRUST BLOCKS AS PER DRAWING No. STD-WW-14. THRUST BLOCKS NOT SHOWN FOR CLARITY.

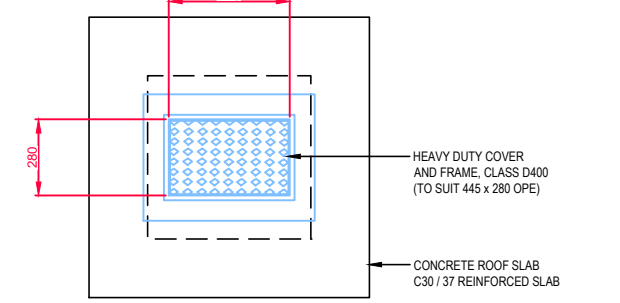


**SECTION**

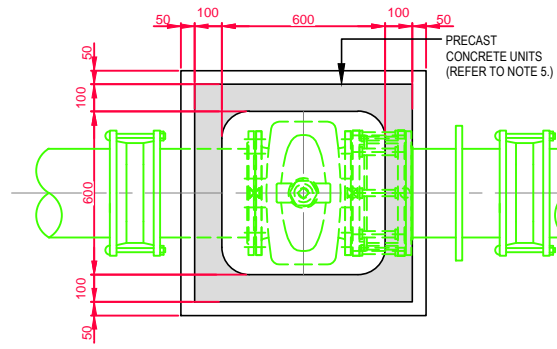
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**ROOF PLAN**

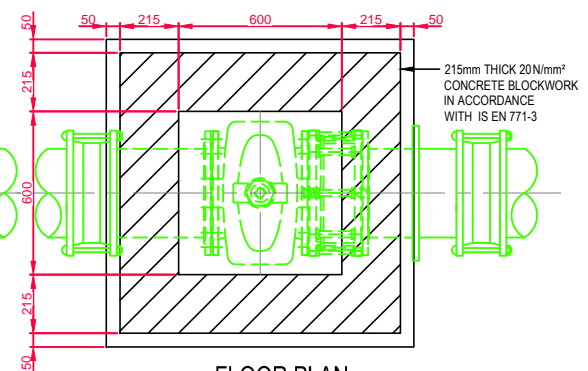


**ROOF PLAN**



**FLOOR PLAN**

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



**FLOOR PLAN**

**SLUICE VALVE CHAMBER  
(BLOCKWORK CONSTRUCTION)**

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

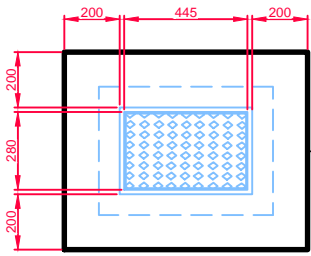


No.	Date	Drn	Chk	Description	App
2	08/16	JMC	TOC	Revised note 6 (Cl. 808)	MOD
1	04/16	JMC	TOC	Flexible couplings shown	MOD
0	09/15	JMC	TOC	Initial Issue	SL

**STANDARD DETAILS - WASTEWATER**

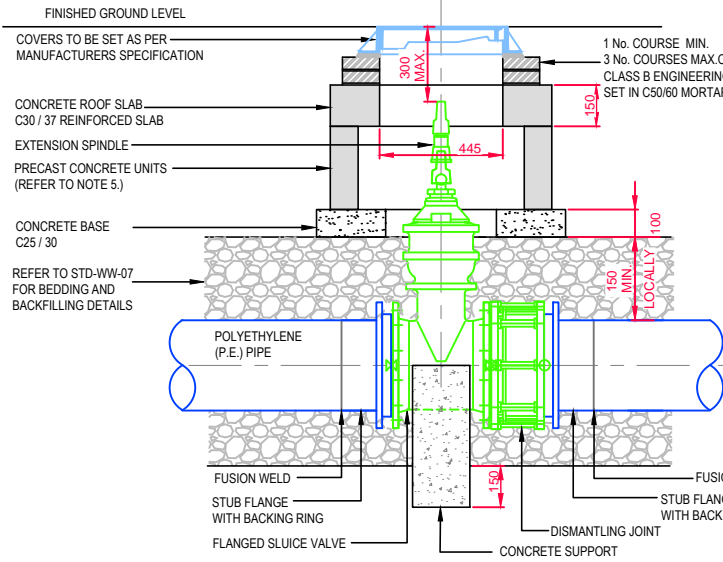
TITLE  
**SLUICE VALVE DETAILS FOR RISING MAINS  
DUCTILE IRON (D.I.) PIPE (< 200mm DIA.)  
(Sheet 1 of 2)**

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. <b>STD-WW-16</b>	REV <b>2</b>

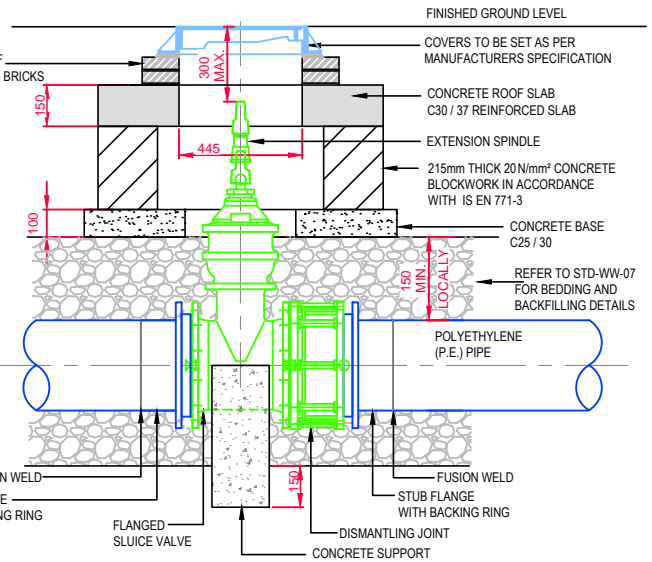


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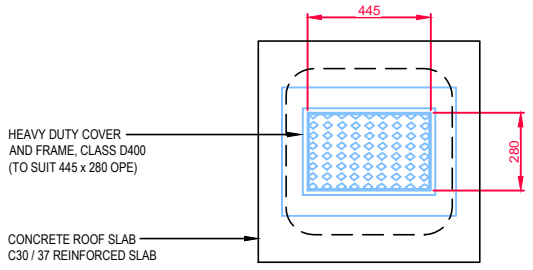
1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. SLUISE VALVE CHAMBERS SHALL BE COVERED WITH APPROVED HEAVY DUTY METAL COVERS TO IS 261 AND BS 5834. COVER AND FRAME SHALL BE SUITABLE FOR ROAD AND TRAFFIC CONDITIONS AND IS SUBJECT TO THE APPROVAL OF IRISH WATER.
3. SLUISE VALVES SHALL 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 SLUISE 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 APPROVAL FROM IRISH WATER.
6. CONCRETE CHAMBERS SHALL BE SURROUNDED BY A MINIMUM OF 150mm COMPACTED CLASS 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, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND 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 FLOATAION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.



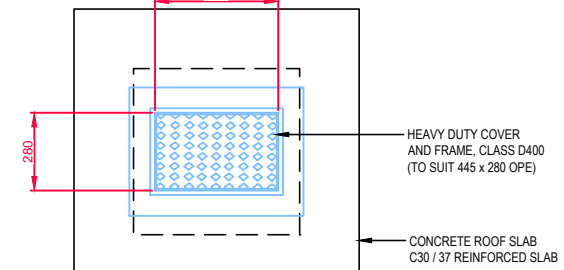
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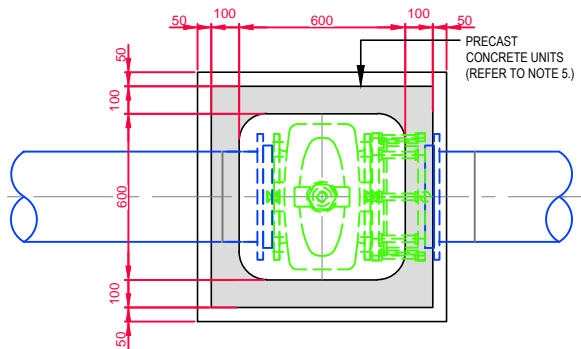
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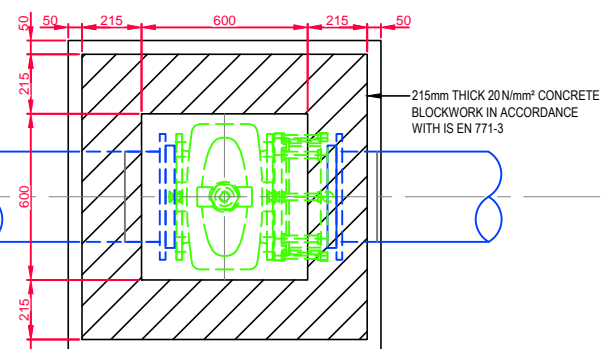
ROOF PLAN



ROOF PLAN



FLOOR PLAN  
SLUISE VALVE CHAMBER  
(PRECAST CONCRETE CONSTRUCTION)



FLOOR PLAN  
SLUISE VALVE CHAMBER  
(BLOCKWORK CONSTRUCTION)

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

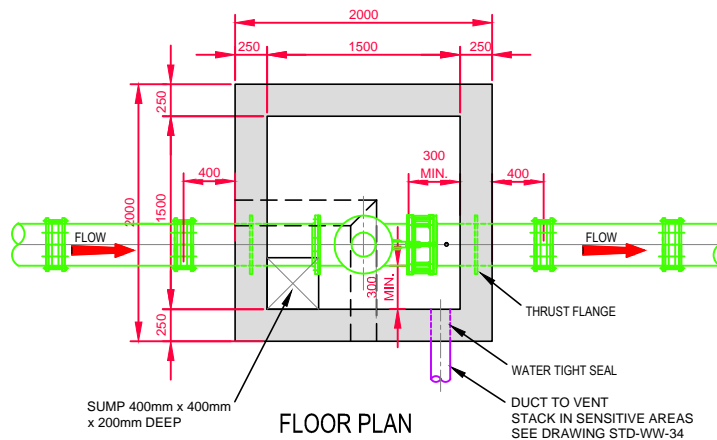
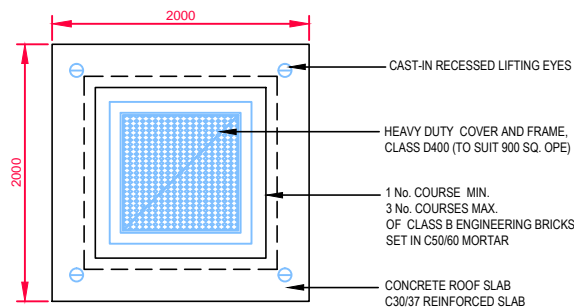
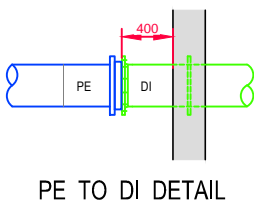
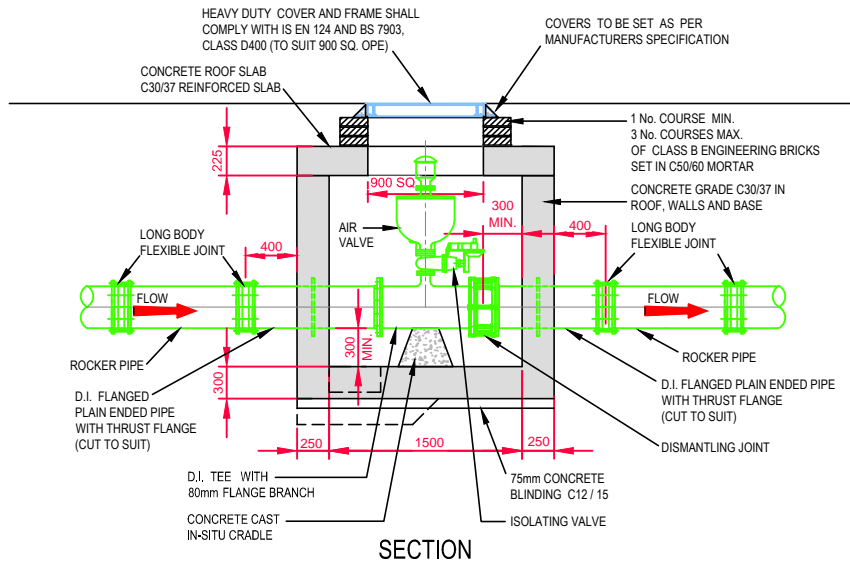


No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Revised note 6 (Cl. 808)	MOD
0	09/15	JMC	TOC	Initial Issue	SL

TITLE  
STANDARD DETAILS - WASTEWATER  
SLUISE VALVE DETAILS FOR RISING MAINS  
POLYETHYLENE (P.E.) PIPE (< 200mm DIA.)  
(Sheet 2 of 2)

SCALE NOT TO SCALE	DATE SEPT. 2015
DRAWING No. STD-WW-17	REV 1

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. VENTILATION STACK TO BE PROVIDED IN SENSITIVE AREAS AND ODOUR UNIT MAY BE REQUIRED DEPENDING ON LOCATION.
3. ISOLATING VALVE TO BE IN ACCORDANCE WITH IS EN 1074-2.
4. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
5. 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 APPROVAL FROM IRISH WATER.
6. 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
7. 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.
8. PRE-CAST UNITS MAY BE USED SUBJECT TO APPROVAL FROM IRISH WATER.
9. ANTI CORROSION TAPE TO BE PROVIDED AROUND ALL BURIED FLANGES.
10. ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
11. ALL DUCTILE IRON PIPE WORK AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 598.
12. ALL PE PIPES AND FITTINGS TO BE IN ACCORDANCE WITH IS EN 12201:2011.
13. ALL CHAMBERS TO BE CHECKED FOR UPLIFT BY THE DEVELOPER BASED ON GROUND CONDITIONS WITHIN THE SITE. SHOULD ANTI FLOATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.



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

STANDARD DETAILS - WASTEWATER

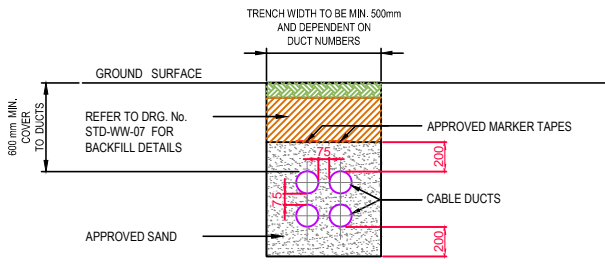
SCALE: NOT TO SCALE DATE: SEPT. 2015

TITLE: AIR VALVE CHAMBER (FOUL RISING MAIN < 200mm DIA.)

DRAWING No.: STD-WW-18 REV: 1

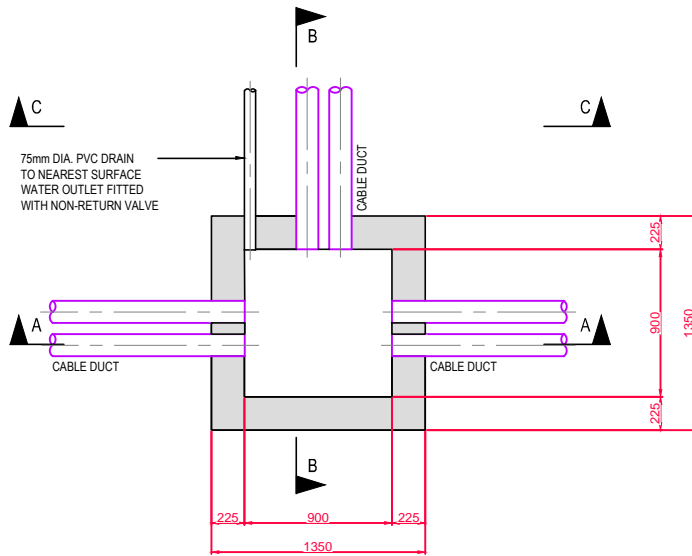


No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Revised note 5 & cover notes	MOD
0	09/15	JMC	TOC	Initial Issue	SL

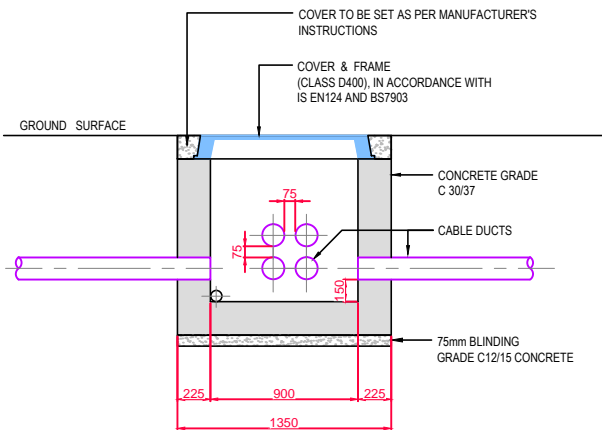


SECTION C - C

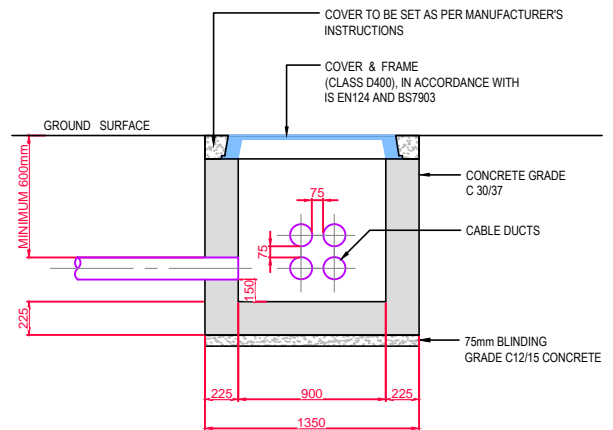
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. STRUCTURAL DESIGN AND REINFORCEMENT DETAILS TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
3. DUCT ARRANGEMENT MAY VARY DEPENDING ON REQUIREMENTS.
4. CABLE DUCTS TO BE IN ACCORDANCE WITH BS 4460 AND BS EN 1401. DUCTS FOR ESB USE TO BE IN ACCORDANCE WITH ESB SPECIFICATION.
5. PROPRIETARY DUCT CHAMBER MAY BE USED SUBJECT TO APPROVAL FROM 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 FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM 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.



PLAN



SECTION A - A



SECTION B - B

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

STANDARD DETAILS - WASTEWATER

SCALE: NOT TO SCALE  
DATE: SEPT. 2015



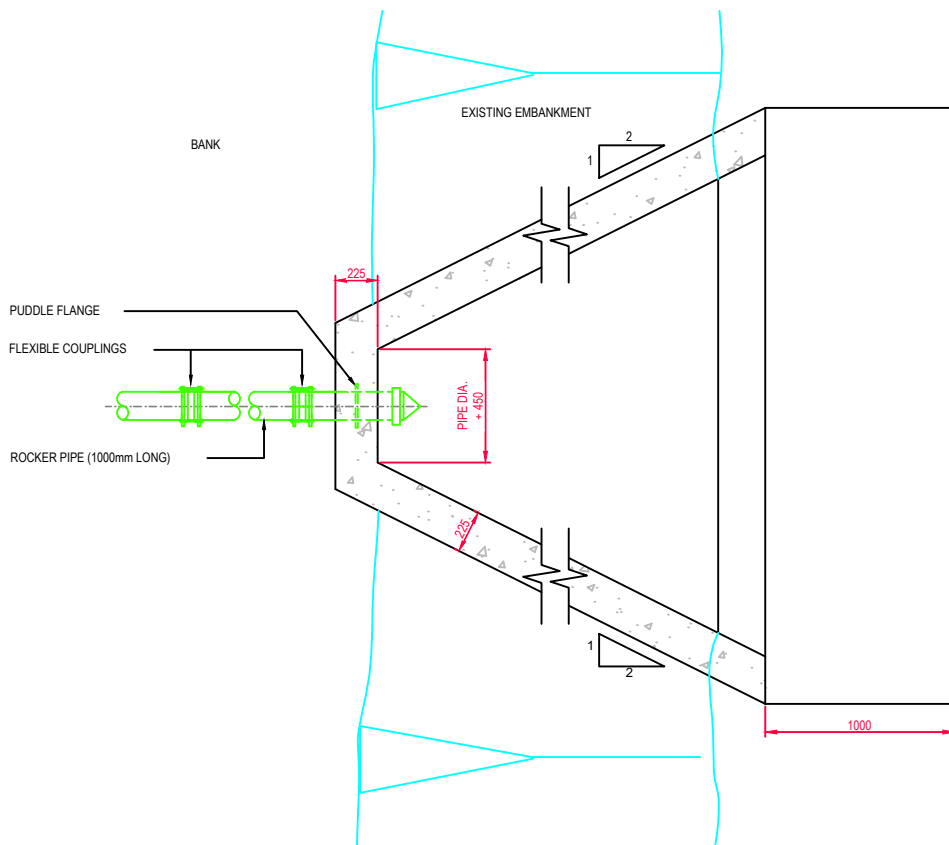
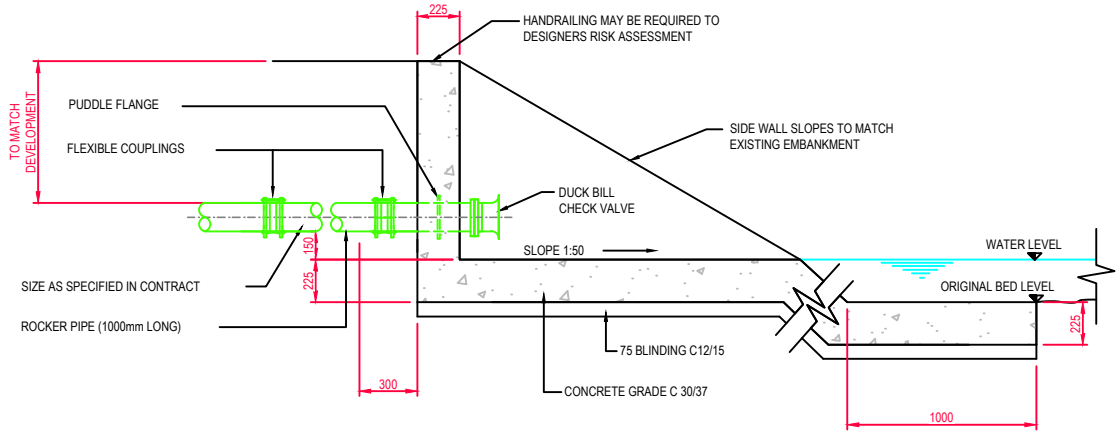
No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Revised notes to cover	MOD
0	09/15	JMC	TOC	Initial Issue	SL

TITLE

DUCT CHAMBER

DRAWING No. STD-WW-19  
REV 1

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 APPROVED 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.



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

STANDARD DETAILS - WASTEWATER

SCALE  
NOT TO SCALE

DATE  
SEPT. 2015

TITLE

EMERGENCY OVERFLOW STRUCTURE

DRAWING No.

STD-WW-20

REV

0

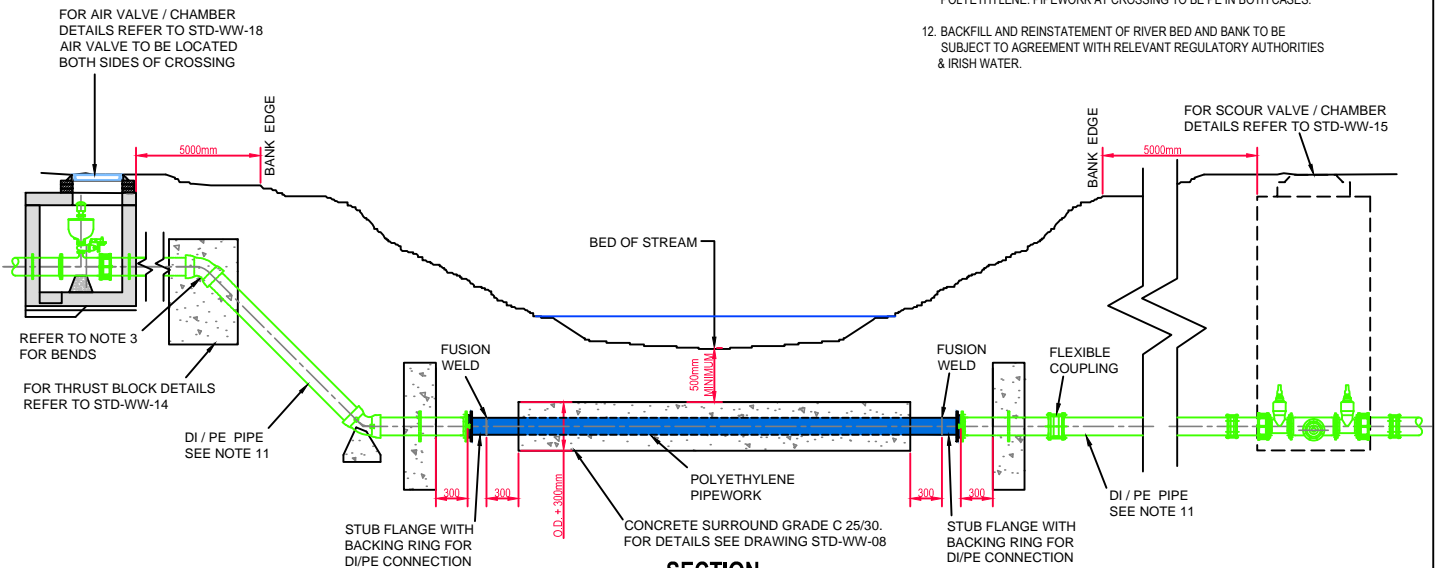
**UISCE**  
ÉIREANN : IRISH  
WATER

No.	Date	Drn	Chk	Description	App
0	09/15	JMC	TOC	Initial Issue	SL

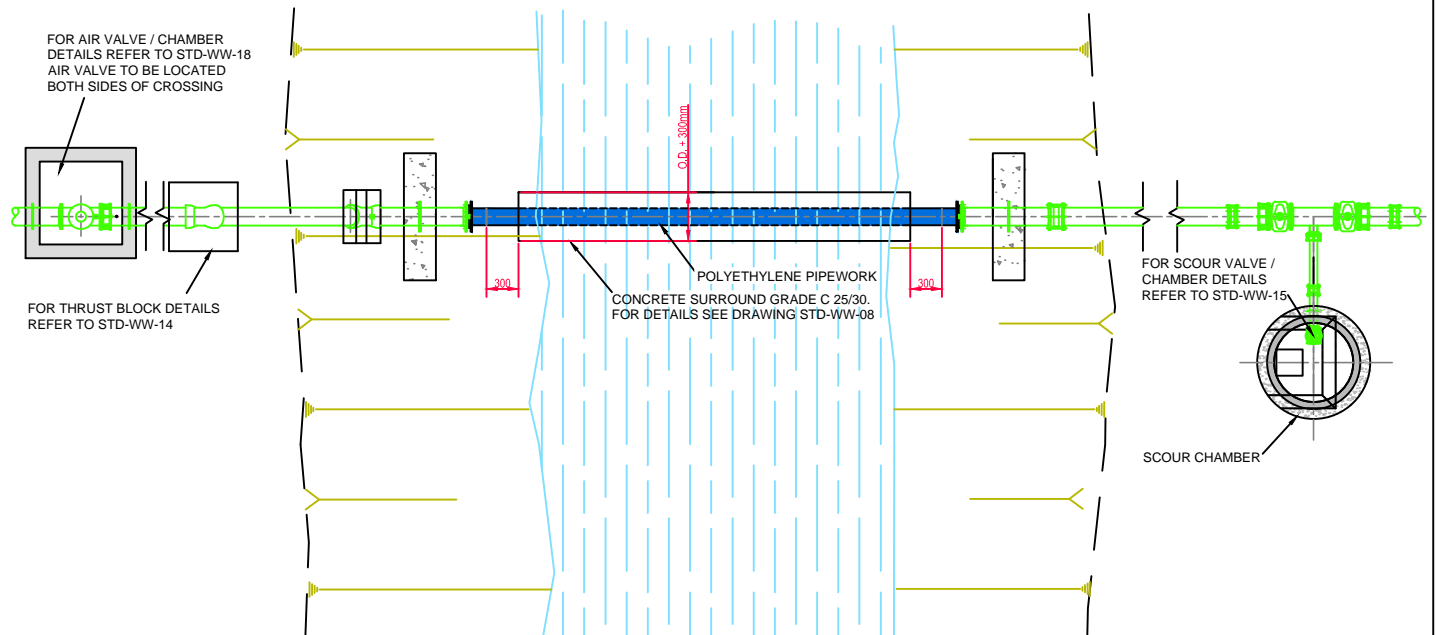




1. ALL DIMENSIONS IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. O.D. REFERS TO OUTSIDE DIAMETER OF PIPES OR COLLARS.
3. BENDS AT RESPECTIVE CROSSINGS SHALL BE INDICATED ON THE LONGITUDINAL SECTION DRAWING.
4. PIPEWORK THROUGH CROSSING TO BE POLYETHYLENE & JOINED USING BUTT FUSION WELDING.
5. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 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. MANHOLE LOCATIONS MUST BE APPROVED 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.



**SECTION**



**PLAN**

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

**STANDARD DETAILS - WASTEWATER**

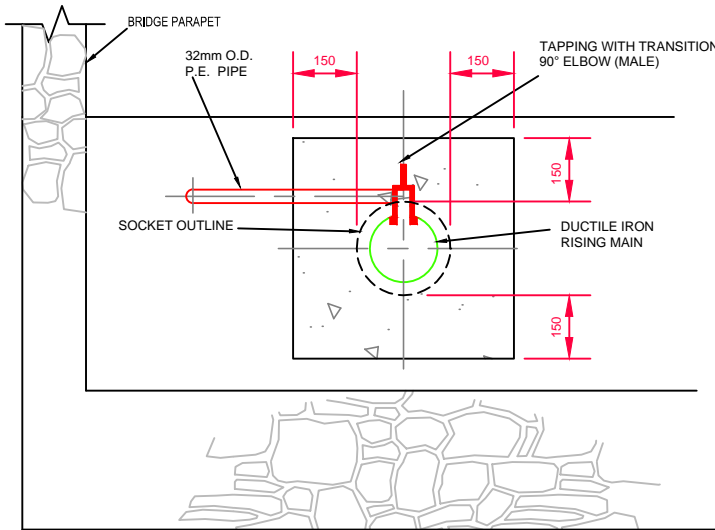
SCALE: NOT TO SCALE  
DATE: SEPT. 2015

TITLE: TYPICAL DITCH / STREAM CROSSING FOR RISING MAIN (Sheet 2 of 2)

DRAWING No.: STD-WW-22  
REV: 0

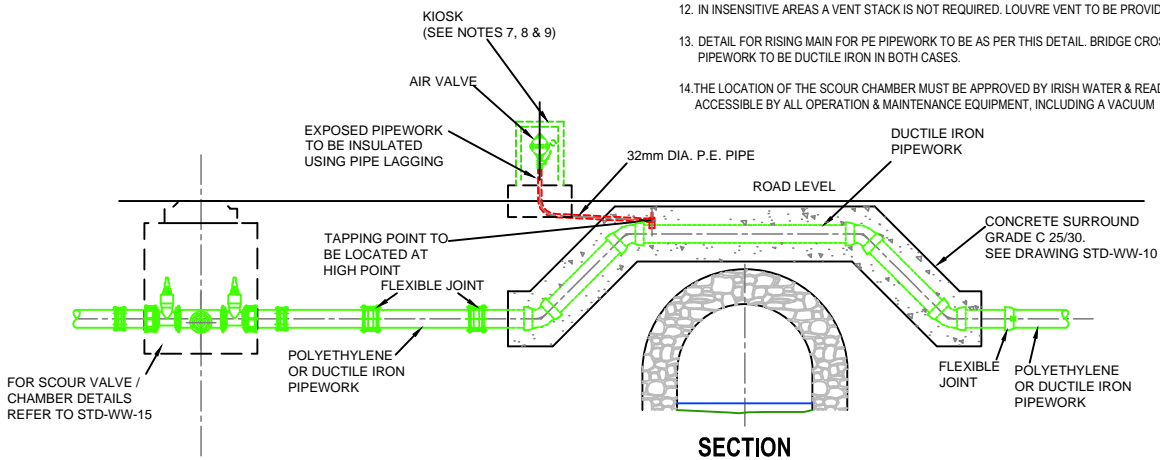


No.	Date	Drn	Chk	Description	App
0	09/15	JMC	TOC	Initial Issue	SL

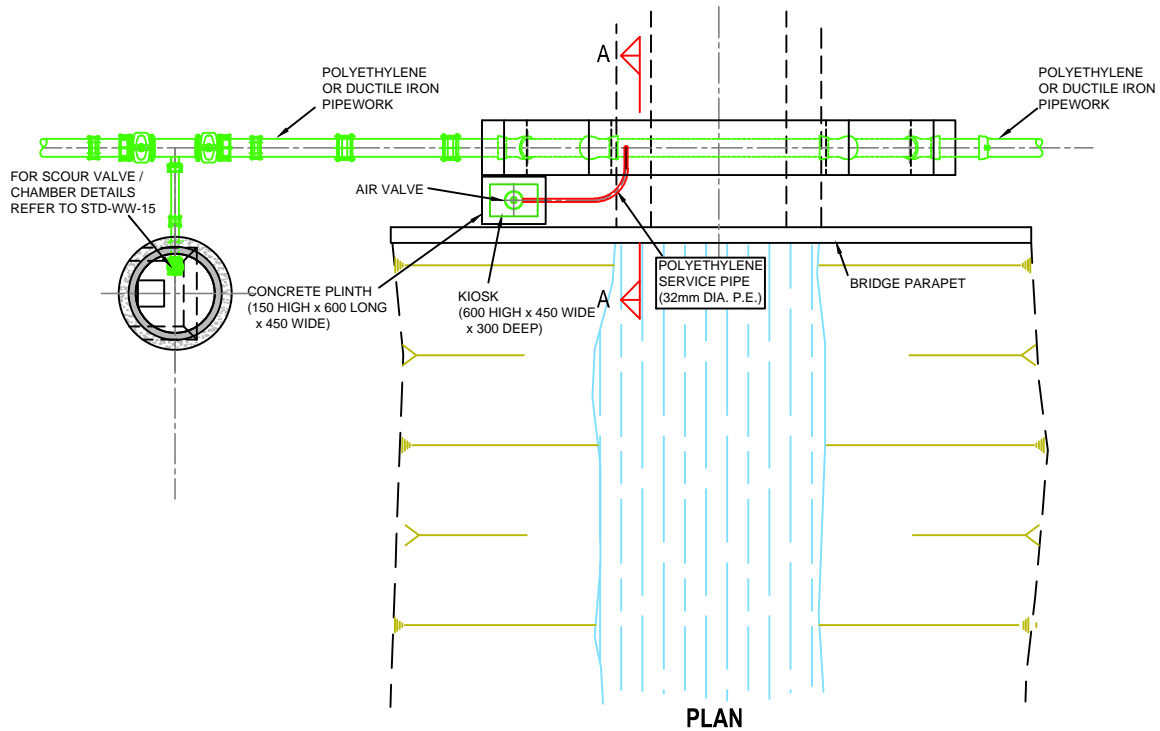


**SECTION A - A  
(AIR VALVE CONNECTION)**

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 APPROVAL.
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. 4mm THICKNESS) TO BS EN 1461. STAINLESS STEEL OR NON-METALLIC MATERIALS, SUCH AS GLASS REINFORCED PLASTIC (GRP), 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 APPROVED BY IRISH WATER & READILY ACCESSIBLE BY ALL OPERATION & MAINTENANCE EQUIPMENT, INCLUDING A VACUUM TANKER.



**SECTION**



**PLAN**

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

**STANDARD DETAILS - WASTEWATER**

SCALE: NOT TO SCALE | DATE: SEPT. 2015

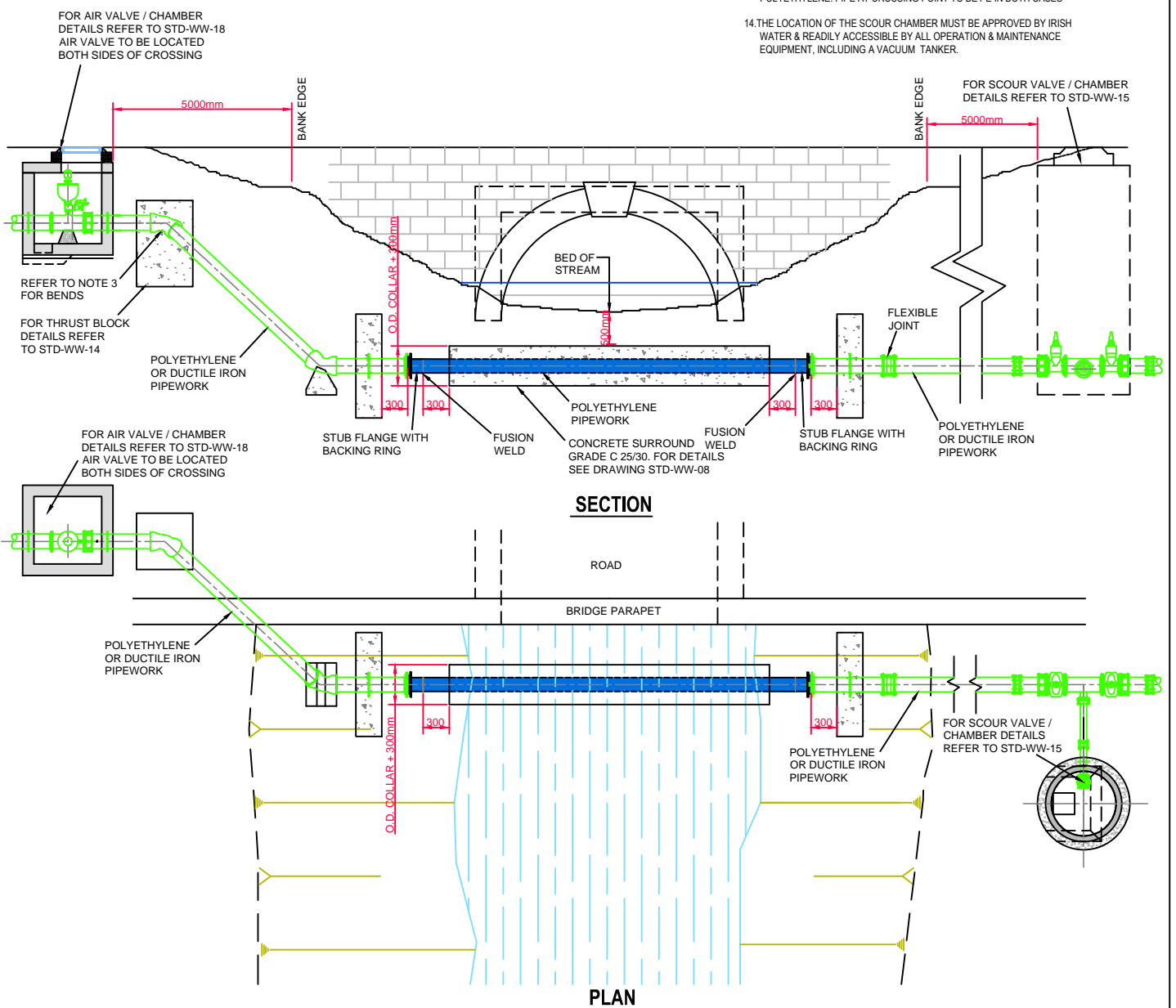
TITLE: **TYPICAL BRIDGE CROSSING FOR RISING MAIN (Sheet 1 of 2)**

DRAWING No.: **STD-WW-23** | REV: **0**



0	09/15	JMC	TOC	Initial Issue	SL
No.	Date	Drn	Chk	Description	App

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 APPROVAL.
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 APPROVED 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

STANDARD DETAILS - WASTEWATER

SCALE  
NOT TO SCALE

DATE  
SEPT. 2015

TITLE

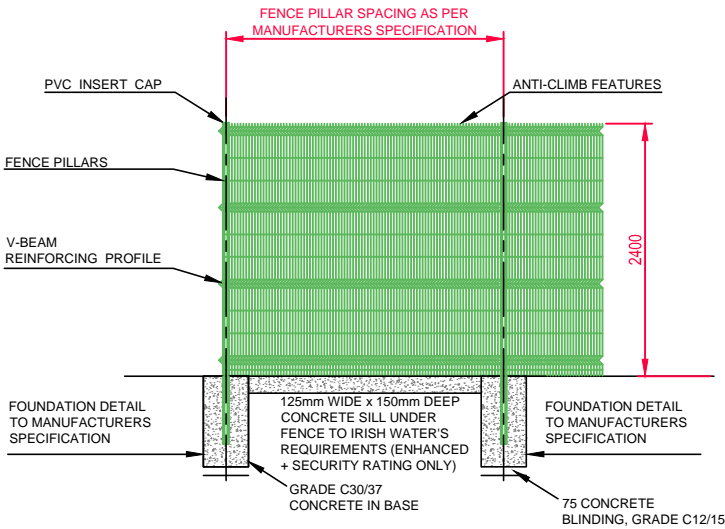
TYPICAL  
BRIDGE CROSSING FOR RISING MAIN  
(Sheet 2 of 2)

DRAWING No. STD-WW-24

REV 0



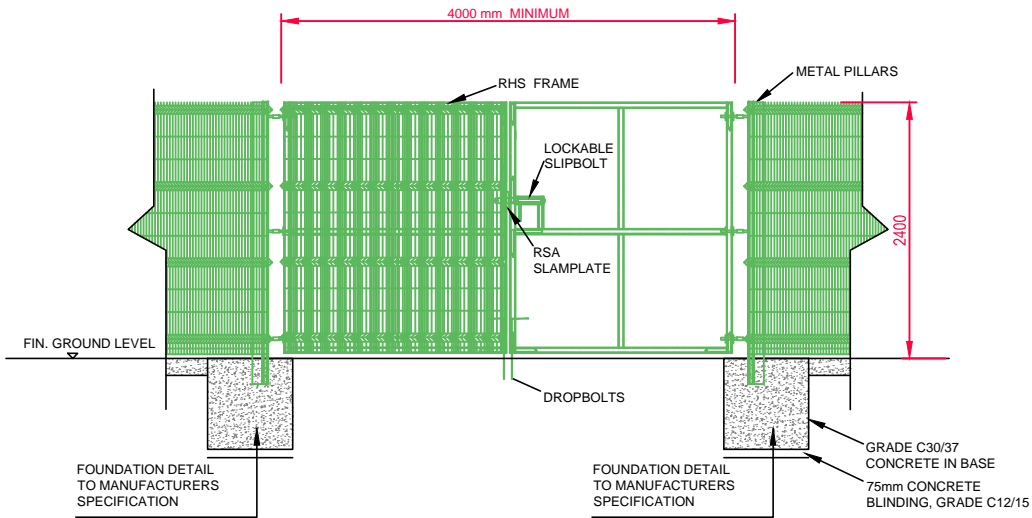
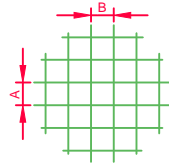
0	09/15	JMC	TOC	Initial Issue	SL
No.	Date	Drn	Chk	Description	App



PANEL - ELEVATION

SECURITY RATING	MESH SPACING A x B	BAR THICKNESS	HEIGHT	ADDITIONAL FEATURES
BASIC +	150 x 50	Type: 868 5mm	2.4m	ANTI-CLIMB
ENHANCED	200 x 50	Type: 868 5mm	2.4m	ANTI-CLIMB
ENHANCED +	12.5 x 50	Type: 868 4mm	2.4m	ANTI-CLIMB & ANTI-BURROW

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 125mm WIDE x 150mm DEEP CONCRETE SILL GRADE C20/25 CONCRETE SHALL BE PROVIDED TO IRISH WATER'S REQUIREMENTS (ENHANCED + SECURITY RATING ONLY).



GATES & PIERS - ELEVATION

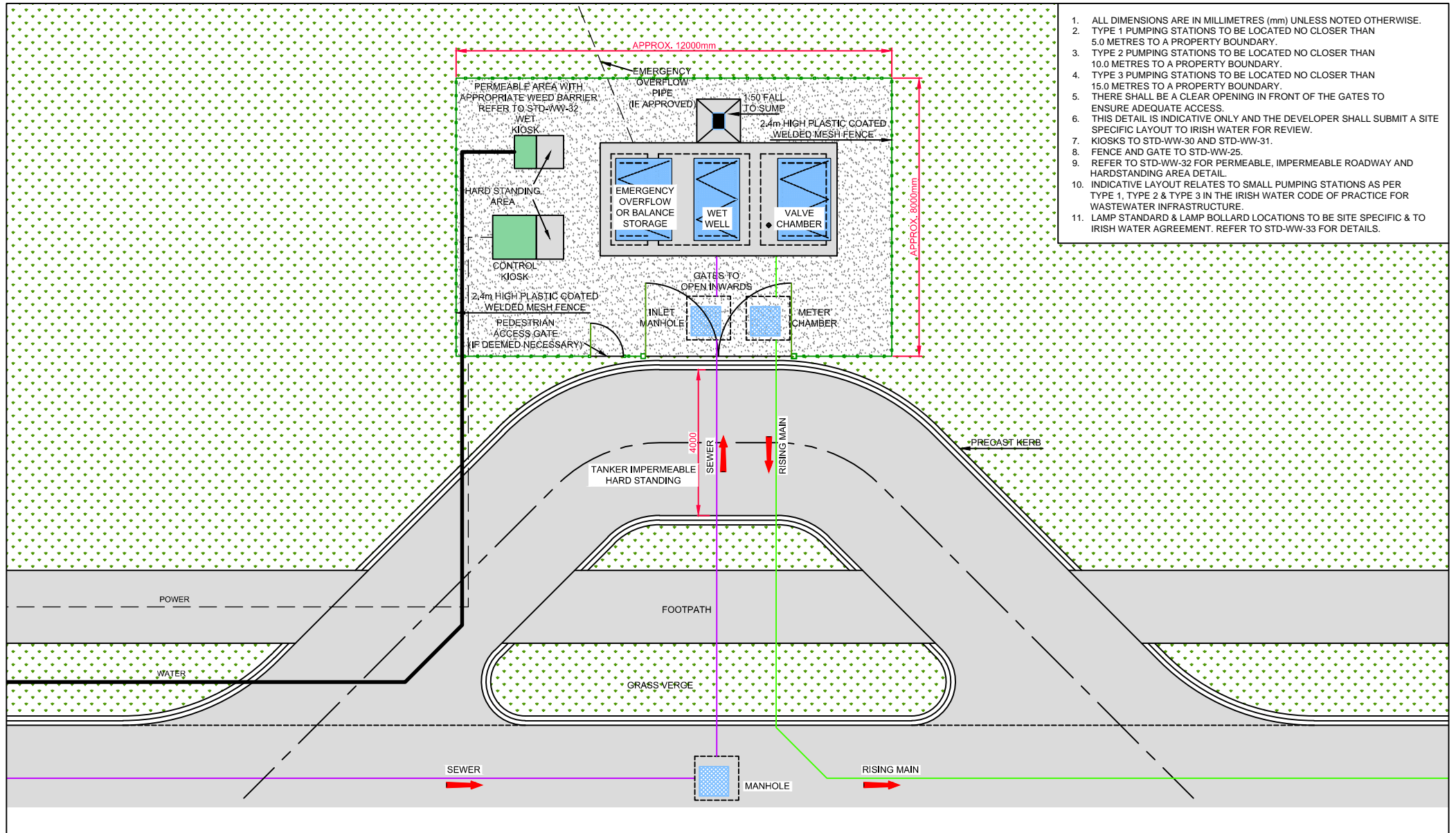


GATES & PIERS - PLAN

**ENTRANCE GATE DETAILS**

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

	STANDARD DETAILS - WASTEWATER					SCALE	DATE
	TITLE					NOT TO SCALE	SEPT. 2015
	SECURITY GATE AND FENCING					DRAWING No.	REV
						STD-WW-25	1
No.	Date	Drn	Chk	Description	App		
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 GATES TO ENSURE ADEQUATE ACCESS.
6. THIS DETAIL IS INDICATIVE ONLY AND THE DEVELOPER SHALL SUBMIT A SITE SPECIFIC LAYOUT TO IRISH WATER FOR REVIEW.
7. KIOSKS TO STD-WW-30 AND STD-WW-31.
8. FENCE AND GATE TO STD-WW-25.
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 & TO IRISH WATER AGREEMENT. REFER TO STD-WW-33 FOR DETAILS.

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

STANDARD DETAILS - WASTEWATER

SCALE NOT TO SCALE DATE SEPT. 2015

TITLE

DRAWING No. REV

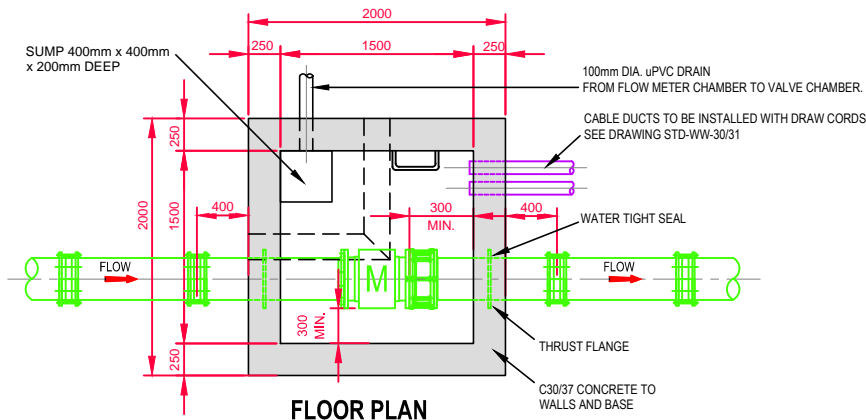
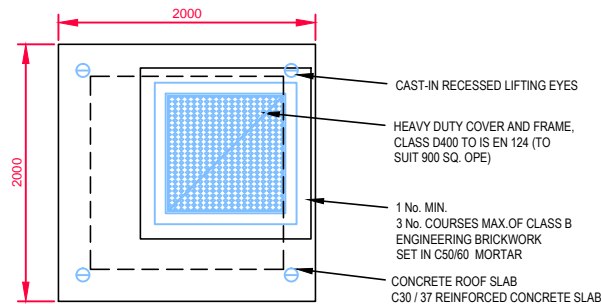
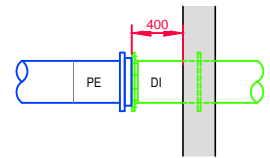
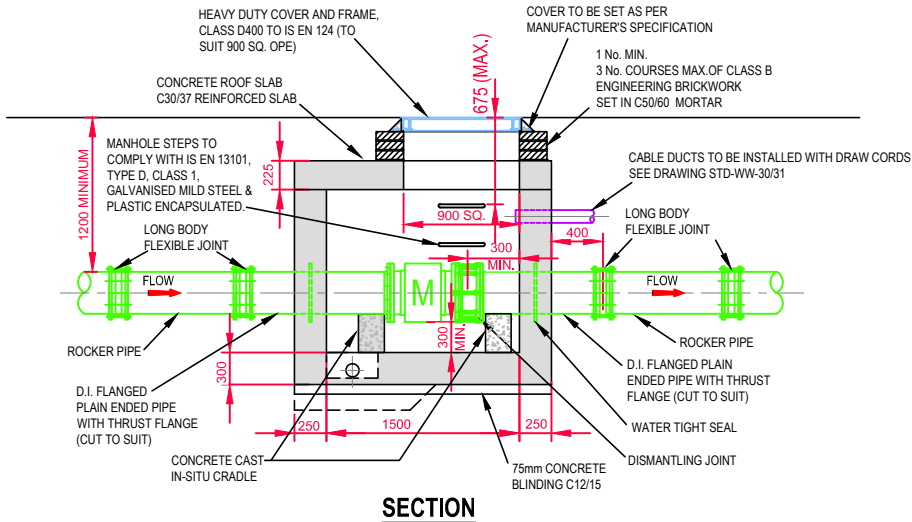
INDICATIVE PUMPING STATION SITE LAYOUT

STD-WW-26 0



0	09/15	JMC	TOC	Initial Issue	SL
No	Date	Dm	Chk	Description	App

- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- STRUCTURAL DESIGN AND REINFORCEMENT DETAIL TO BE PROVIDED BY THE DEVELOPER AND SUBMITTED TO IRISH WATER FOR REVIEW.
- 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 APPROVAL FROM IRISH WATER.
- 200mm ALL AROUND, 100mm DEEP CONCRETE PLINTH WITH PROTECTIVE STAINLESS STEEL METAL BAND AROUND COVERS IN GREEN AREAS.
- PRE-CAST UNITS MAYBE USED SUBJECT TO APPROVAL FROM IRISH WATER.
- 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 APPROVAL FROM 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.



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

STANDARD DETAILS - WASTEWATER

SCALE NOT TO SCALE DATE SEPT. 2015

TITLE

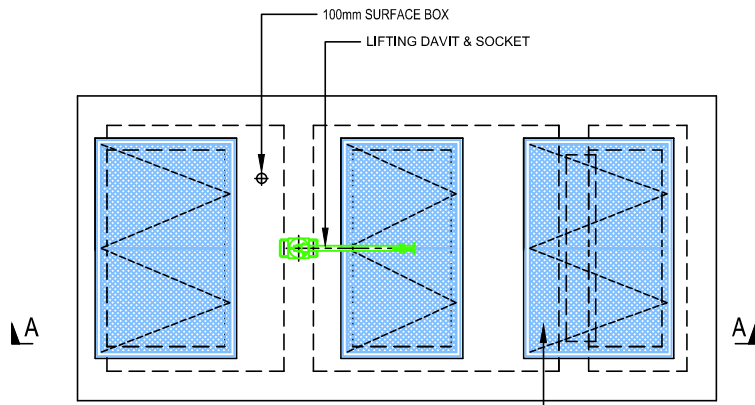
DRAWING No. REV

FLOW METER CHAMBER (FOUL RISING MAIN <200mm DIA.)

STD-WW-27 1



No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Added steps, revised cover notes & note 3	MOD
0	09/15	JMC	TOC	Initial Issue	SL

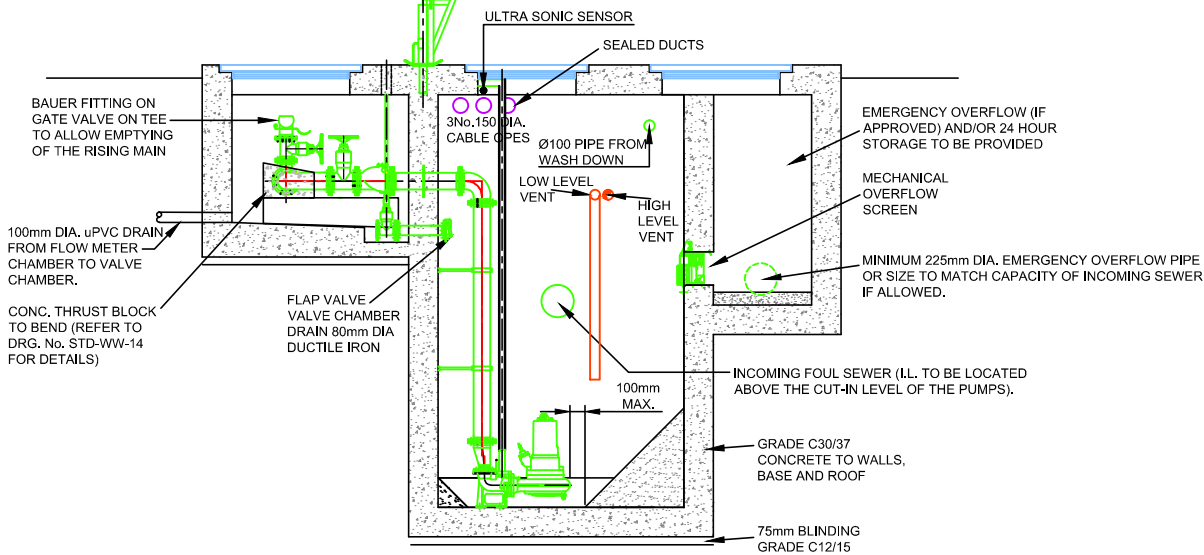


**ROOF PLAN**

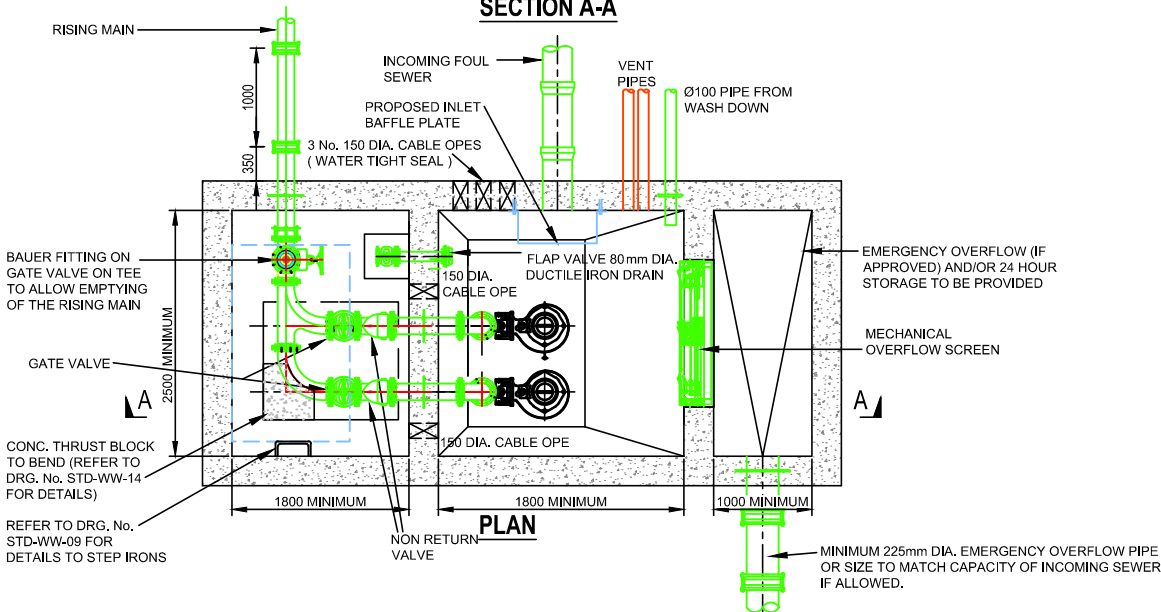
APPROPRIATE DAVIT FOR PUMP REMOVAL  
(TO BE APPROVED BY IRISH WATER)

ASSIST LIFT ACCESS COVER  
WITH SAFETY GRID  
AND INCORPORATED  
HAND RAILS

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PUMPS SHALL BE INSTALLED TO IRISH WATER REQUIREMENTS.
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 APPROVAL FROM 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.
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. WALL THICKNESS AND REINFORCEMENT SHALL BE SELECTED BASED ON SITE SPECIFIC DESIGN AND SHALL BE SUBJECT TO APPROVAL OF IRISH WATER.
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 WATER RESISTANT 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 APPROVAL FROM IRISH WATER.
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. A 24 HOUR STORAGE CAPACITY BASED ON DRY WEATHER FLOW, SHALL BE PROVIDED AT THE PUMPING STATION.
16. EMERGENCY OVERTFLOW MAY BE PROVIDED SUBJECT TO APPROVAL FROM THE RELEVANT REGULATORY AUTHORITIES.
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**



**PLAN**

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

**STANDARD DETAILS - WASTEWATER**

SCALE: NOT TO SCALE  
DATE: SEPT. 2015

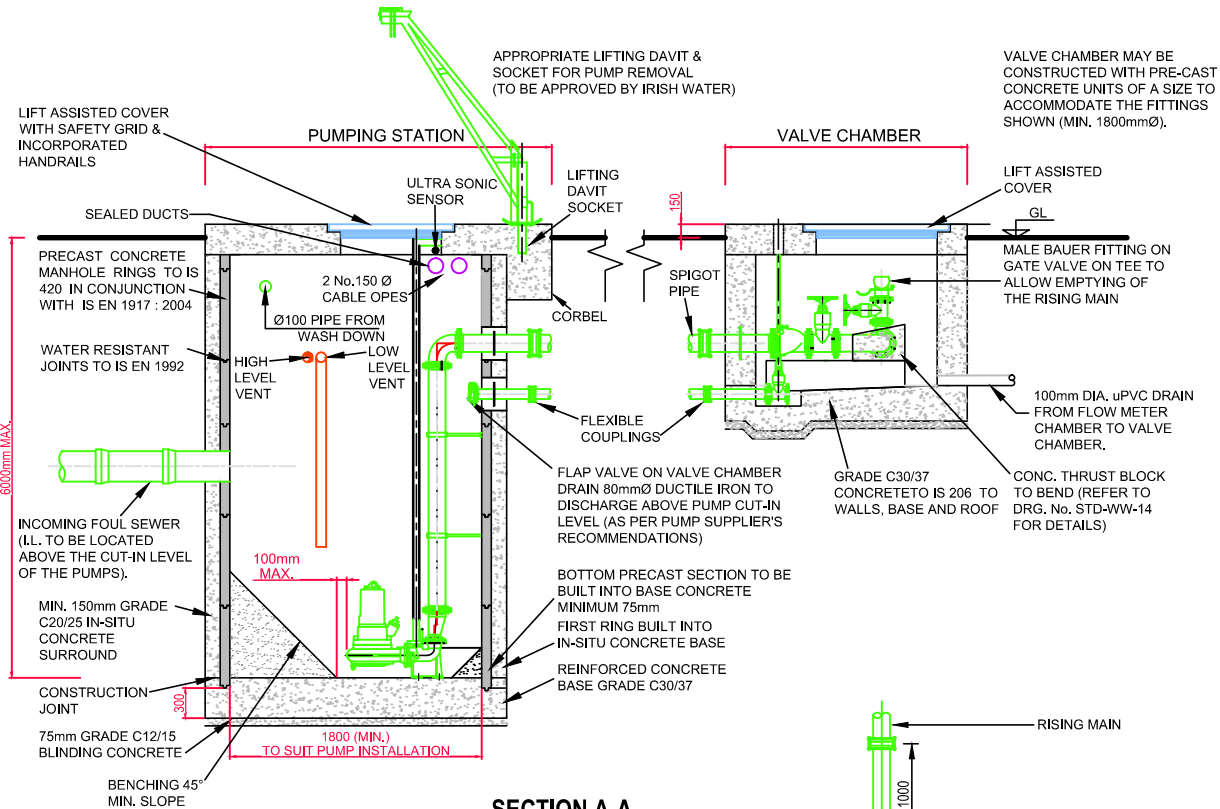
TITLE: INDICATIVE SUBMERSIBLE PUMPING STATION

DRAWING No. STD-WW-28  
REV 1

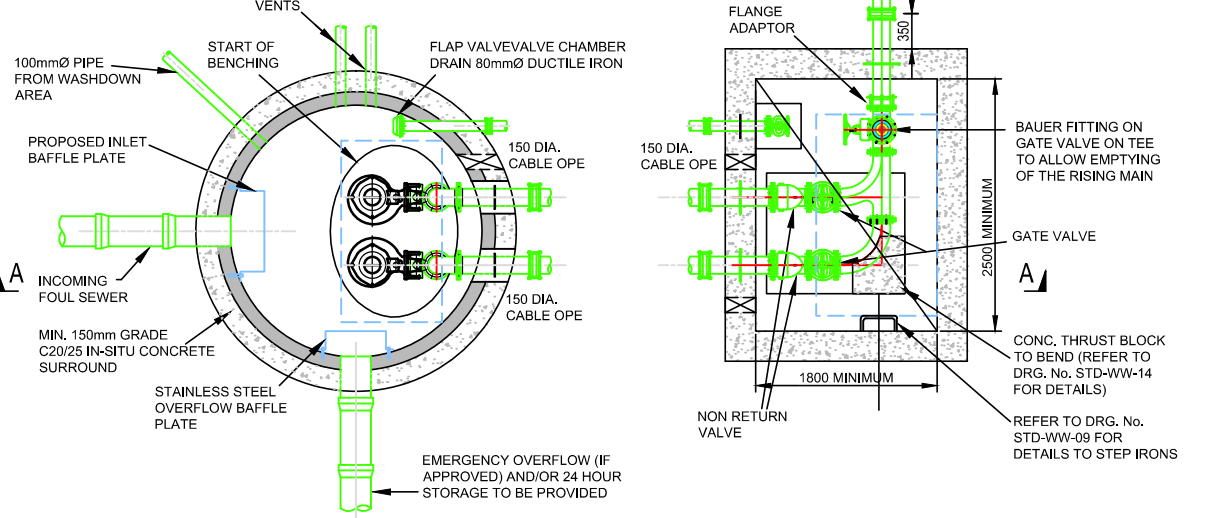


No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Revised note 4, incoming sewer note & added thrust block & step irons to valve chamber	MOD
0	09/15	JMC	TOC	Initial Issue	SL

1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
2. PUMPS SHALL BE INSTALLED TO IRISH WATER REQUIREMENTS.
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 APPROVAL FROM IRISH WATER.
5. ALL GATE VALVES TO BE CLOCKWISE CLOSING.
6. WET WELL TO BE IN ACCORDANCE WITH BS EN 1992-3.
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. PRE-CAST MANHOLES UNITS: COMPLYING WITH REQUIREMENTS OF IS EN 1917 AND BS 5911-PART 3.
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 WATER RESISTANT 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-FLOATATION MEASURES BE REQUIRED THEY SHALL BE SUBJECT TO APPROVAL FROM IRISH WATER.
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. A 24 HOUR STORAGE CAPACITY BASED ON DRY WEATHER FLOW, SHALL BE PROVIDED AT THE PUMPING STATION.
16. EMERGENCY OVERFLOW MAY BE PROVIDED SUBJECT TO APPROVAL FROM THE RELEVANT REGULATORY AUTHORITIES.
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**



**PLAN**

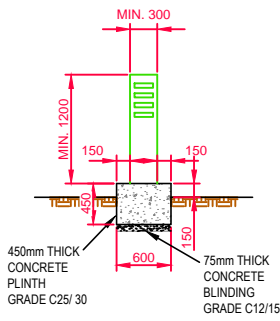
REFER TO INDEX SHEET FOR NOTES REGARDING DESIGN RESPONSIBILITY & RISK ASSESSMENT

					<b>STANDARD DETAILS - WASTEWATER</b>		SCALE NOT TO SCALE	DATE JUL. 2016
	TITLE						DRAWING No.	REV
	INDICATIVE PRE-CAST CONCRETE SUBMERSIBLE PUMPING STATION						STD-WW-28A	0
0	08/16	JMC	TOC	Initial Issue				
No.	Date	Drn	Chk	Description	App			

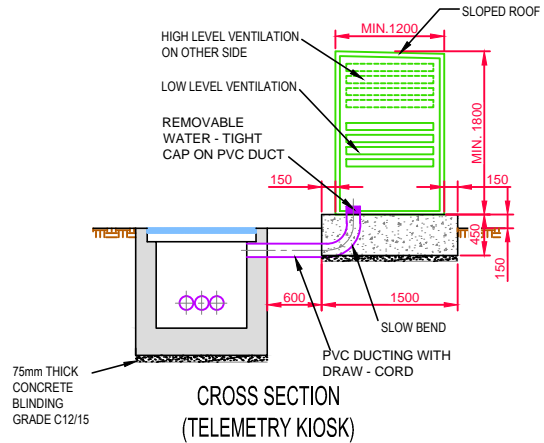




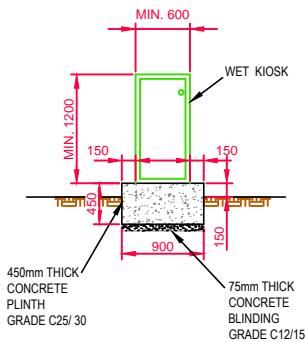
- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- KIOSKS TO BE CONSTRUCTED FROM THERMOSETTING U.V. & WEATHER RESISTANT PLASTIC POWDER COATED & HOT DIPPED GALVANISED MILD STEEL PLATE (MINIMUM 4mm THICKNESS) TO BS EN 1461. STAINLESS STEEL OR NON-METALLIC MATERIALS, SUCH AS GLASS REINFORCED PLASTIC (GRP), 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 C39. INTERIOR FINISH TO BE WHITE UNLESS APPROVED BY IRISH WATER.
- THE QUALITY OF KIOSK CONSTRUCTION SHALL ENSURE THAT THE FOLLOWING IS ACHIEVED:
  - A THERMAL TRANSMITTANCE OF 1.5W PER m<sup>2</sup>K
  - 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.
  - AN IP RATING OF IP65 OR EQUIVALENT.
- KIOSK TO HAVE SINGLE OR DOUBLE STEEL/GRP DOORS WITH MULTIPLE LOCKS TO LPS 1175 SR4 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.
- KIOSK TO BE BOLTED TO THE PLINTH THROUGH A BOTTOM FLANGE WITH GALVANISED MILD STEEL OR STAINLESS STEEL ANCHOR BOLTS.
- THE BOTTOM FLANGE SHALL BE SEATED ON A NEOPRENE GASKET AND SEALED WITH MASTIC.
- REAR WALL SHALL BE REINFORCED WITH STAINLESS STEEL SECTIONS TO WHICH A MARINE PLY WOOD, 18mm THICK BOARD IS FIXED.
- THE INTERNAL LAYOUT OF THE KIOSK SHALL BE SUBJECT TO IRISH WATER APPROVAL.
- TELEMETRY DUCTING TO BE IN ACCORDANCE WITH BS 4660 AND BS EN 1401.
- ELECTRICAL REQUIREMENTS TO BE IN ACCORDANCE WITH ESB SPECIFICATION.
- THE ROOF OF THE KIOSK SHALL BE REMOVABLE (BOLTS) TO FACILITATE BACKBOARD REMOVAL.
- ALL EXPOSED PIPEWORK TO BE ADEQUATELY INSULATED WITH PIPE LAGGING.
- ALL CONCRETE TO BE IN ACCORDANCE WITH IS EN 206.
- WATER TIGHT SEALS ARE TO BE PROVIDED WHERE DUCTING ENTERS DUCT CHAMBERS AND KIOSKS. ALL DUCTING TO BE INSTALLED WITH DRAW CORDS.
- 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.
- ALL DIMENSIONS ARE MINIMUM DIMENSIONS AND MAY VARY TO SUIT THE KIOSK REQUIREMENT.



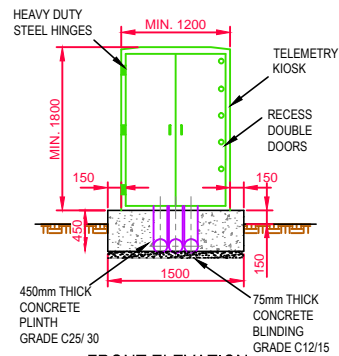
CROSS SECTION  
(WET KIOSK)



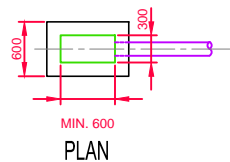
CROSS SECTION  
(TELEMETRY KIOSK)



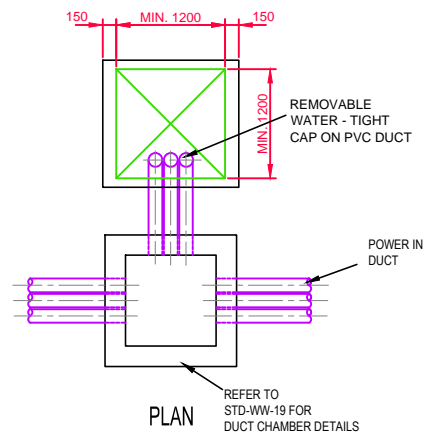
FRONT ELEVATION  
(WET KIOSK)



FRONT ELEVATION  
(CONTROL KIOSK)



WET KIOSK



CONTROL KIOSK

**NOTE:**  
ALL KIOSK DIMENSIONS ARE MINIMUM DIMENSIONS & MAY VARY TO SUIT THE KIOSK REQUIREMENT.

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

STANDARD DETAILS - WASTEWATER

SCALE  
NOT TO SCALE

DATE  
SEPT. 2015

TITLE  
KIOSK TYPE 1 PUMPING STATION  
AND WET KIOSK  
(Sheet 1 of 2)

DRAWING No.  
STD-WW-30

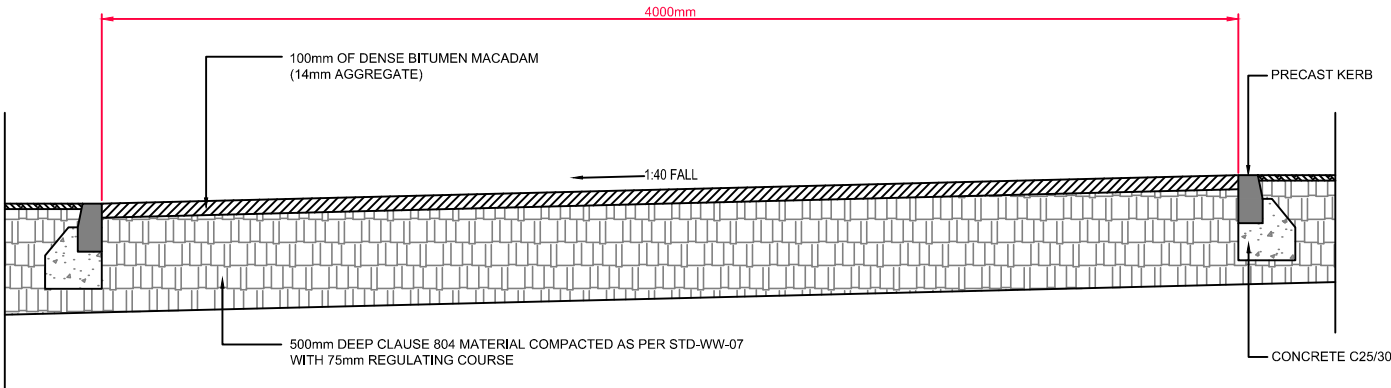
REV  
1



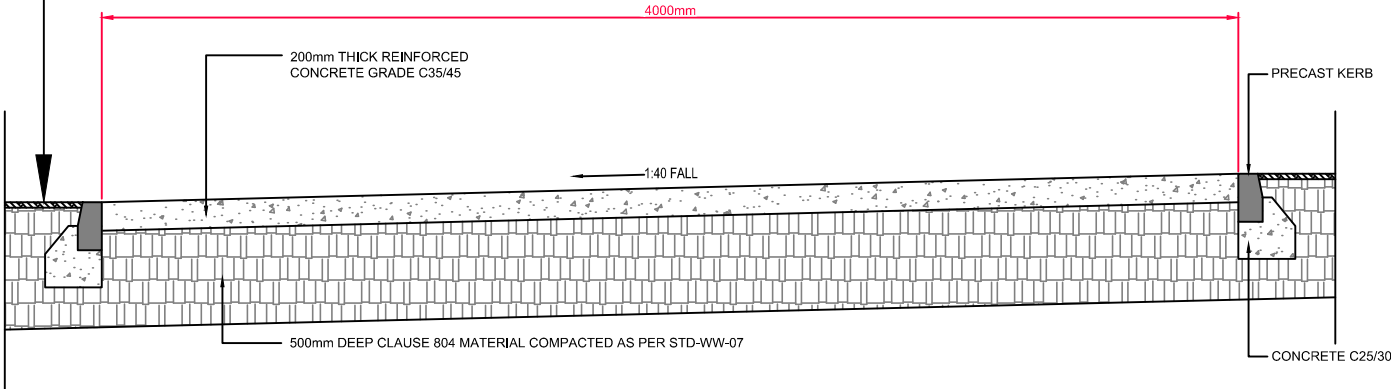
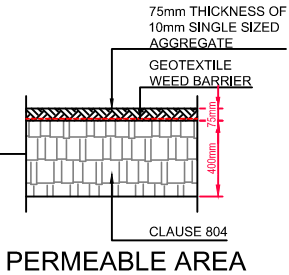
No.	Date	Drn	Chk	Description	App
1	08/16	JMC	TOC	Added note 5 (kiosk doors)	MOD
0	09/15	JMC	TOC	Initial Issue	SL



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



CROSS SECTION OF MACADAM SURFACE



CROSS SECTION CONCRETE SLAB

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

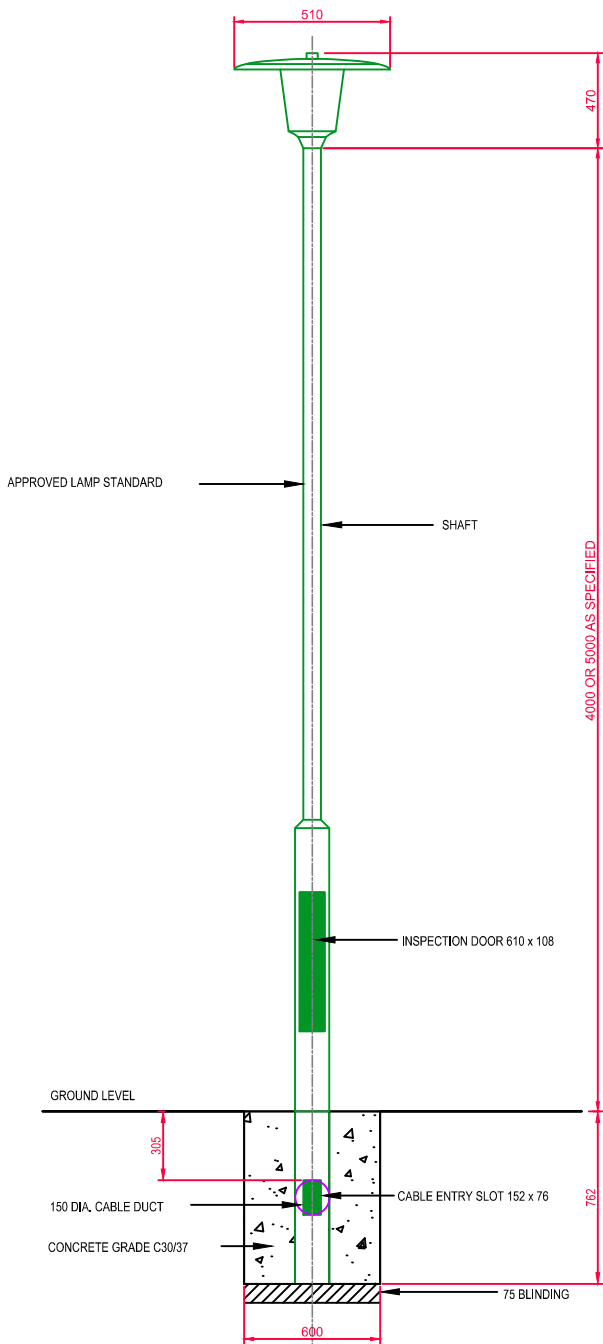


0	09/15	JMC	TOC	Initial Issue	SL
No.	Date	Drm	Chk	Description	App

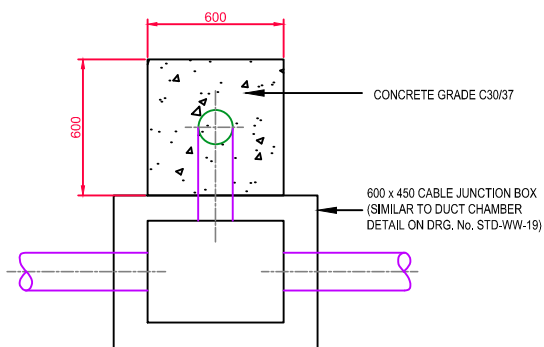
STANDARD DETAILS - WASTEWATER	
TITLE	HARDSTANDING AREA PUMPING STATION (PERMEABLE AND IMPERMEABLE)

SCALE	NOT TO SCALE	DATE	SEPT. 2015
DRAWING No.	STD-WW-32	REV	0

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

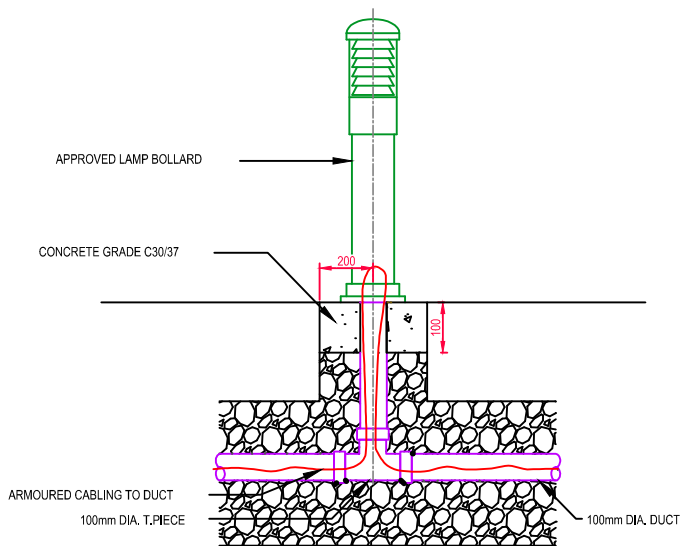


**SECTION**

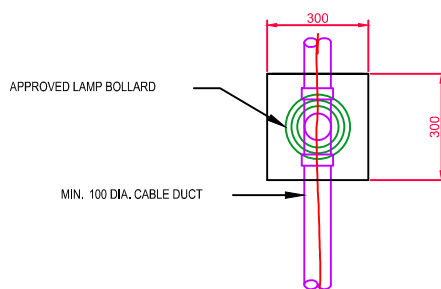


**PLAN**

**LAMP STANDARD**



**SECTION**



**PLAN**

**LAMP BOLLARD**

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



0	09/15	JMC	TOC	Initial Issue	SL
No.	Date	Drn	Chk	Description	App

STANDARD DETAILS - WASTEWATER

SCALE NOT TO SCALE DATE SEPT. 2015

TITLE

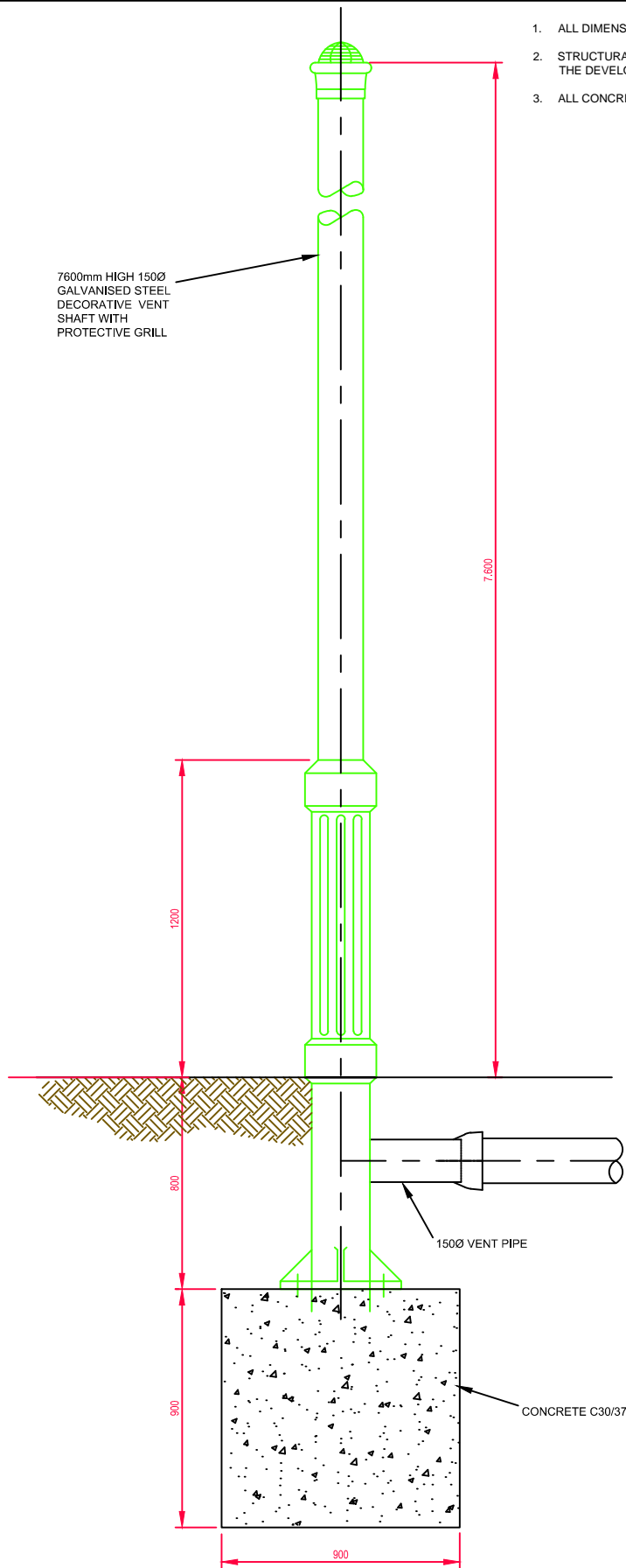
DRAWING No. REV

LAMP BOLLARD & LAMP STANDARD

STD-WW-33

0

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 APPROVAL.
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

SCALE: NOT TO SCALE  
DATE: SEPT. 2015

TITLE: VENT STACK

DRAWING No.: STD-WW-34  
REV: 0



0	09/15	JMC	TOC	Initial Issue	SL
No.	Date	Drn	Chk	Description	App

## STANDARD DETAILS FOR WASTEWATER NETWORKS: REVISION LOG – 02 (12<sup>th</sup> Aug. 2016)

DRG No.	DRAWING TITLE	MATERIAL CHANGE	NON-MATERIAL CHANGE	REV	COMMENTS
STD-WW-01	WASTE WATER SERVICE CONNECTION RESPONSIBILITY			0	No change
STD-WW-02	TYPICAL LAYOUT FOR SEWER WITHIN NEW DEVELOPMENTS			0	No change
STD-WW-03	DRAIN & SERVICE CONNECTION PIPEWORK			0	No change
STD-WW-04	TYPICAL SEWER / SERVICE PIPE CONNECTION			0	No change
STD-WW-05	TYPICAL SERVICE LAYOUT INDICATING SEPARATION DISTANCES			0	No change
STD-WW-06	RESTRICTIONS ON TREES/SHRUBS PLANTING ADJACENT TO SEWERS	Added new section: "Existing Planting".	Added notes to "New Planting" section.	1	Drawing revised
STD-WW-07	TRENCH BACKFILL & BEDDING			0	No change
STD-WW-08	CONCRETE BED, HAUNCH & SURROUND TO WASTEWATER PIPES			0	No change
STD-WW-09	BLOCKWORK MANHOLE (<450mm DIA.)	Added manhole steps	Added notes & dimensions. Revised access ope dimension.	1	Drawing revised
STD-WW-10	PRE-CAST CONCRETE MANHOLE	Added manhole steps	Added notes & dimensions. Revised access ope dimension.	1	Drawing revised
STD-WW-11	IN-SITU CONCRETE MANHOLE	Added manhole steps	Added notes & dimensions. Revised access ope dimension.	1	Drawing revised
STD-WW-12	BACKDROP MANHOLES	Added manhole steps		1	Drawing revised
STD-WW-13	PRIVATE SIDE INSPECTION CHAMBER		Added Cl. 808 to note 8	1	Drawing revised
STD-WW-14	THRUST BLOCKS FOR RISING MAINS			0	No change
STD-WW-15	SCOUR VALVE CHAMBER (FOUL RISING MAIN <200mm DIA.)	Added manhole steps	Revised cover notes & note 2. Revised access ope & chamber size dimension.	1	Drawing revised
STD-WW-16	SLUICE VALVE DETAILS FOR RISING MAINS DUCTILE IRON (D.I.) PIPE (<200mm DIA.) (Sheet 1 of 2)		Revised note 6: Changed Cl 804 to Cl 808.	2	Drawing revised
STD-WW-17	SLUICE VALVE DETAILS FOR RISING MAINS POLYETHYLENE (P.E.) PIPE (<200mm DIA.) (Sheet 2 of 2)		Revised note 6: Changed Cl 804 to Cl 808.	1	Drawing revised
STD-WW-18	AIR VALVE CHAMBER (FOUL RISING MAIN <200mm DIA.)		Revised note5 (IS EN 124) & cover notes.	1	Drawing revised
STD-WW-19	DUCT CHAMBER		Revised notes to cover	1	Drawing revised
STD-WW-20	EMERGENCY OVERFLOW STRUCTURE			0	No change
STD-WW-21	TYPICAL DITCH/STREAM CROSSING FOR GRAVITY MAIN (Sheet 1 of 2)			0	No change
STD-WW-22	TYPICAL DITCH/STREAM CROSSING FOR RISING MAIN (Sheet 2 of 2)			0	No change
STD-WW-23	TYPICAL BRIDGE CROSSING FOR RISING MAIN (Sheet 1 of 2)			0	No change
STD-WW-24	TYPICAL BRIDGE CROSSING FOR RISING MAIN (Sheet 2 of 2)			0	No change
STD-WW-25	SECURITY GATE & FENCING		Added notes 4 & 5, & note to panel elevation. Revised notes 6, 14 & security rating table.	1	Drawing revised
STD-WW-26	INDICATIVE PUMPING STATION LAYOUT			0	No change
STD-WW-27	FLOW METER CHAMBER (FOUL RISING MAIN <200mm DIA.)	Added manholes steps	Revised cover notes & note 3 (IS EN 124).	1	Drawing revised
STD-WW-28	INDICATIVE SUBMERSIBLE PUMPING STATION	Added thrust block & step irons in valve chamber	Revised note 4 & incoming foul sewer note.	1	Drawing revised
STD-WW-28A	INDICATIVE PRE-CAST CONCRETE SUBMERSIBLE PUMPING STATION			0	New Drawing
STD-WW-29	RISING MAIN DISCHARGE MANHOLE		Revised note to cover & access ope dimension	1	Drawing revised
STD-WW-30	KIOSK TYPE 1 PUMPING STATION & WET KIOSK (Sheet 1 of 2)		Added note 5 re. kiosk doors.	1	Drawing revised
STD-WW-31	KIOSK TYPE 2 + 3 PUMPING STATION & WET KIOSK (Sheet 2 of 2)		Added note 3 re. kiosk doors.	1	Drawing revised
STD-WW-32	HARDSTANDING AREA PUMPING STATION (PERMEABLE & IMPERMEABLE)			0	No change
STD-WW-33	LAMP BOLLARD & LAMP STANDARD			0	No change
STD-WW-34	VENT STACK			0	No change
/	INDEX SHEET	Inclusion of STD-WW-28A	Drawing revisions updated	Aug. 2016	Drawing revisions updated
/	Design Risk Assessment for Wastewater Standard Details	Inclusion of STD-WW-28A	General Amendments	v3.01	Document revised