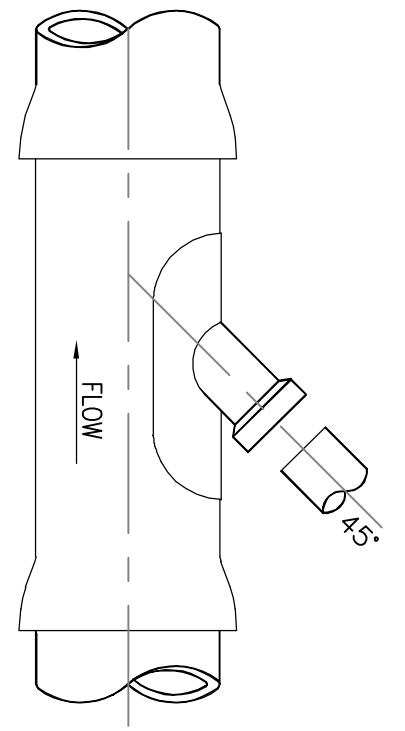
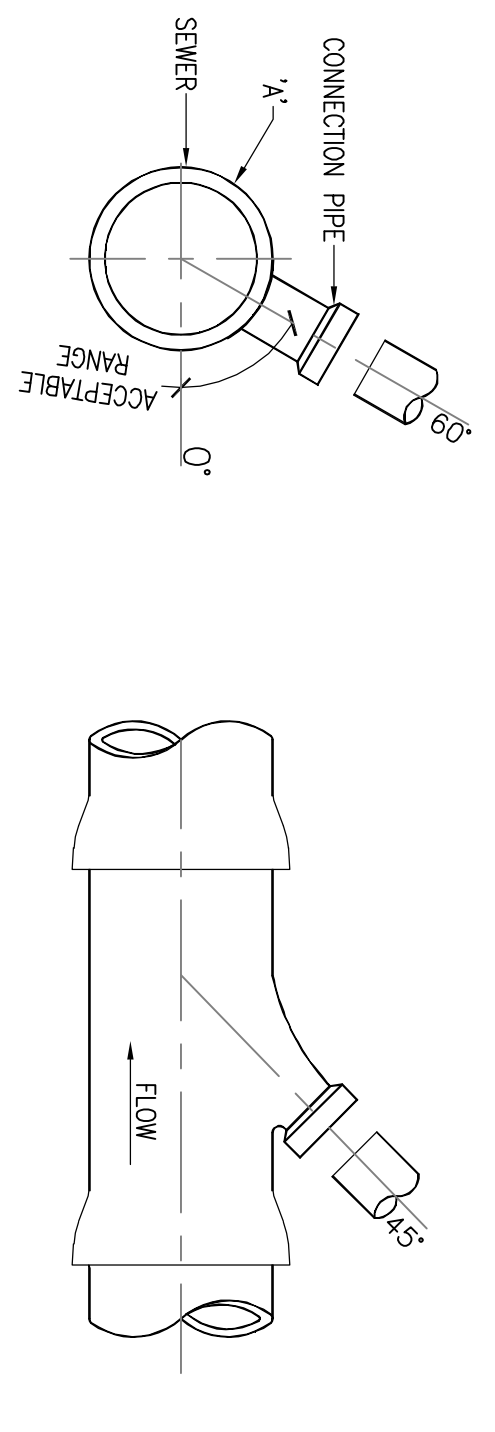


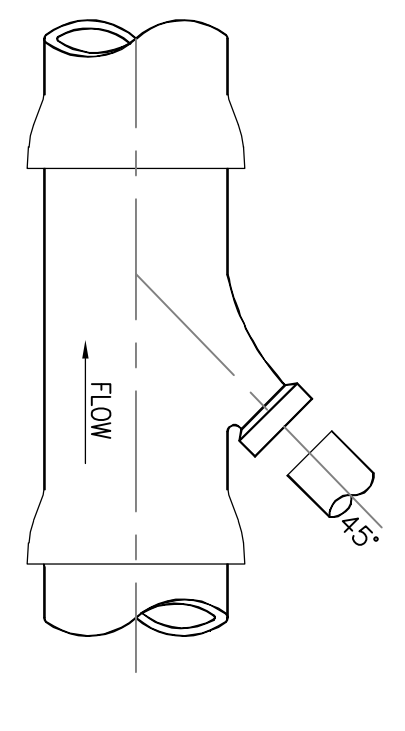
**CROSS SECTION VIEW OF SEWER**  
SCALE N.T.S.



**VIEW IN DIRECTION OF ARROW 'A'**  
SCALE N.T.S.



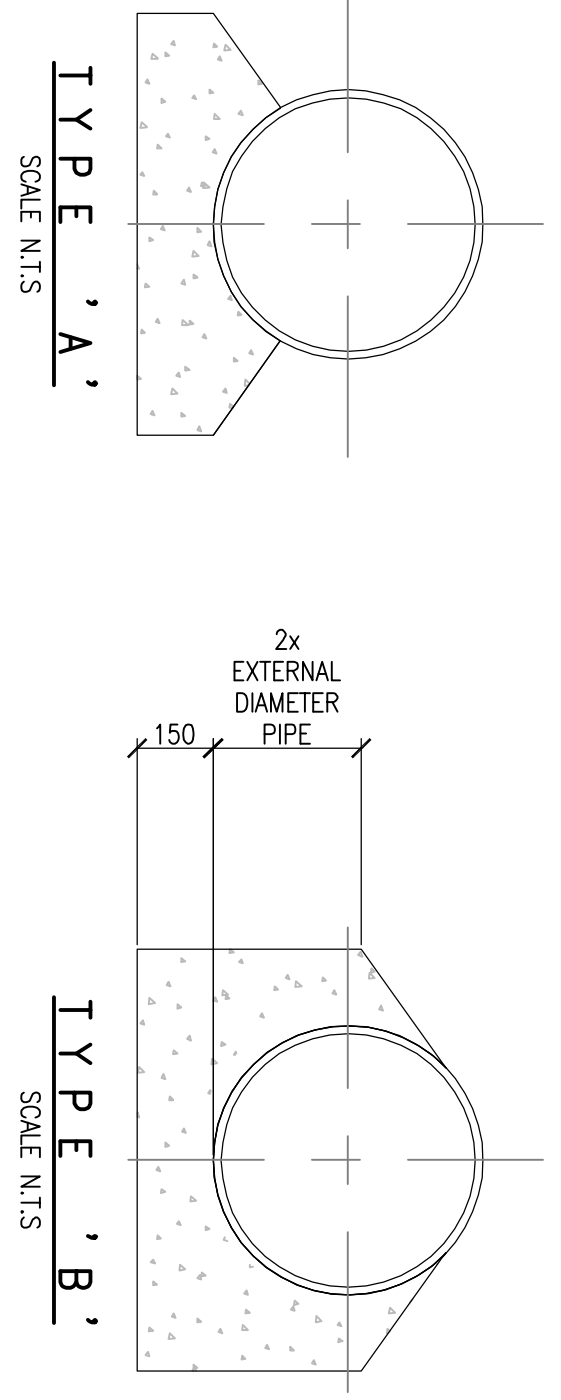
**APPROVED 45° SADDLE CONNECTION**  
SCALE N.T.S.



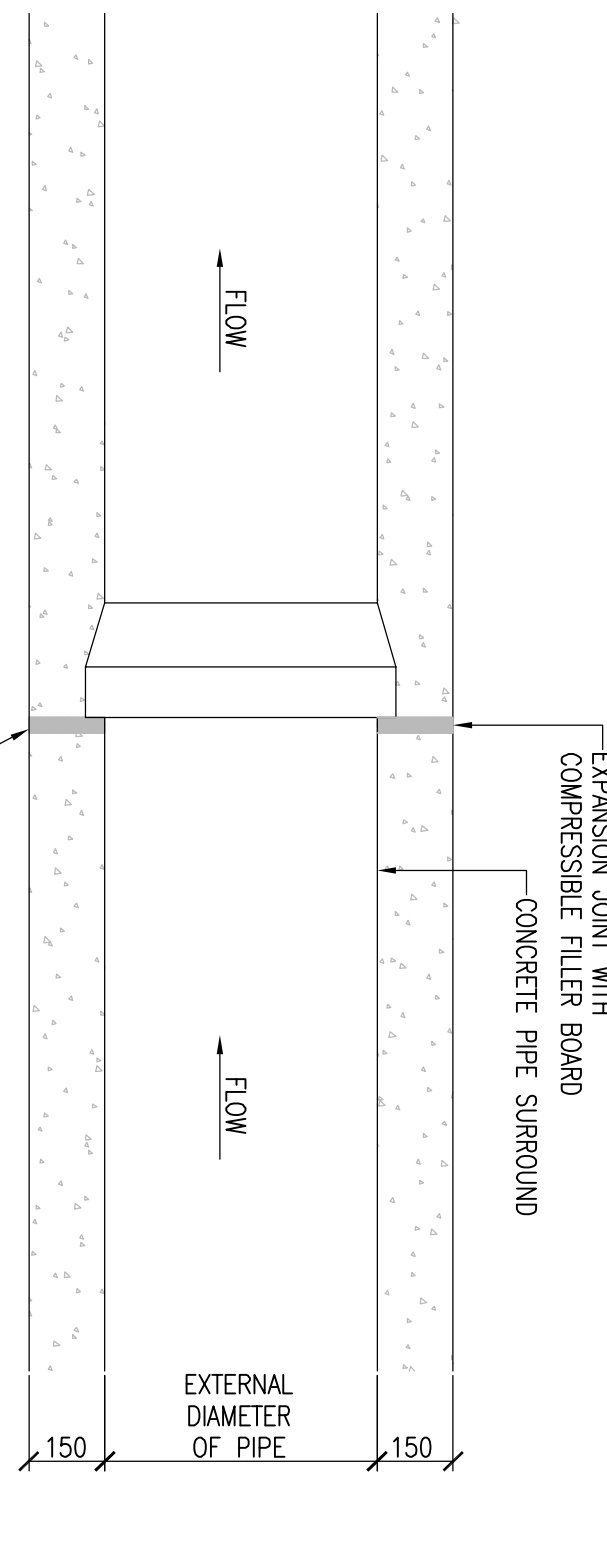
**VIEW IN DIRECTION OF ARROW 'A'**  
SCALE N.T.S.

- NOTES:**
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.
  3. WHERE IT IS NECESSARY TO MAKE A POST-CONSTRUCTION CONNECTION THE DETAILER SHALL BRING THE SEWER TO THE INSPECTION CHAMBER, INSTALL THE CONNECTION MARKER AND SEAL THE UPSTREAM END UNTIL THE CONNECTION IS REQUIRED.
  4. THE VERTICAL ANGLE BETWEEN THE SERVICE CONNECTING PIPE AND THE HORIZONTAL SHALL BE GREATER THAN 0° AND NOT MORE THAN 60°.
  5. 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.
  6. 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.
  7. 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.

**TYPICAL SEWER/SERVICE PIPE CONNECTION - STD-W-W-04**

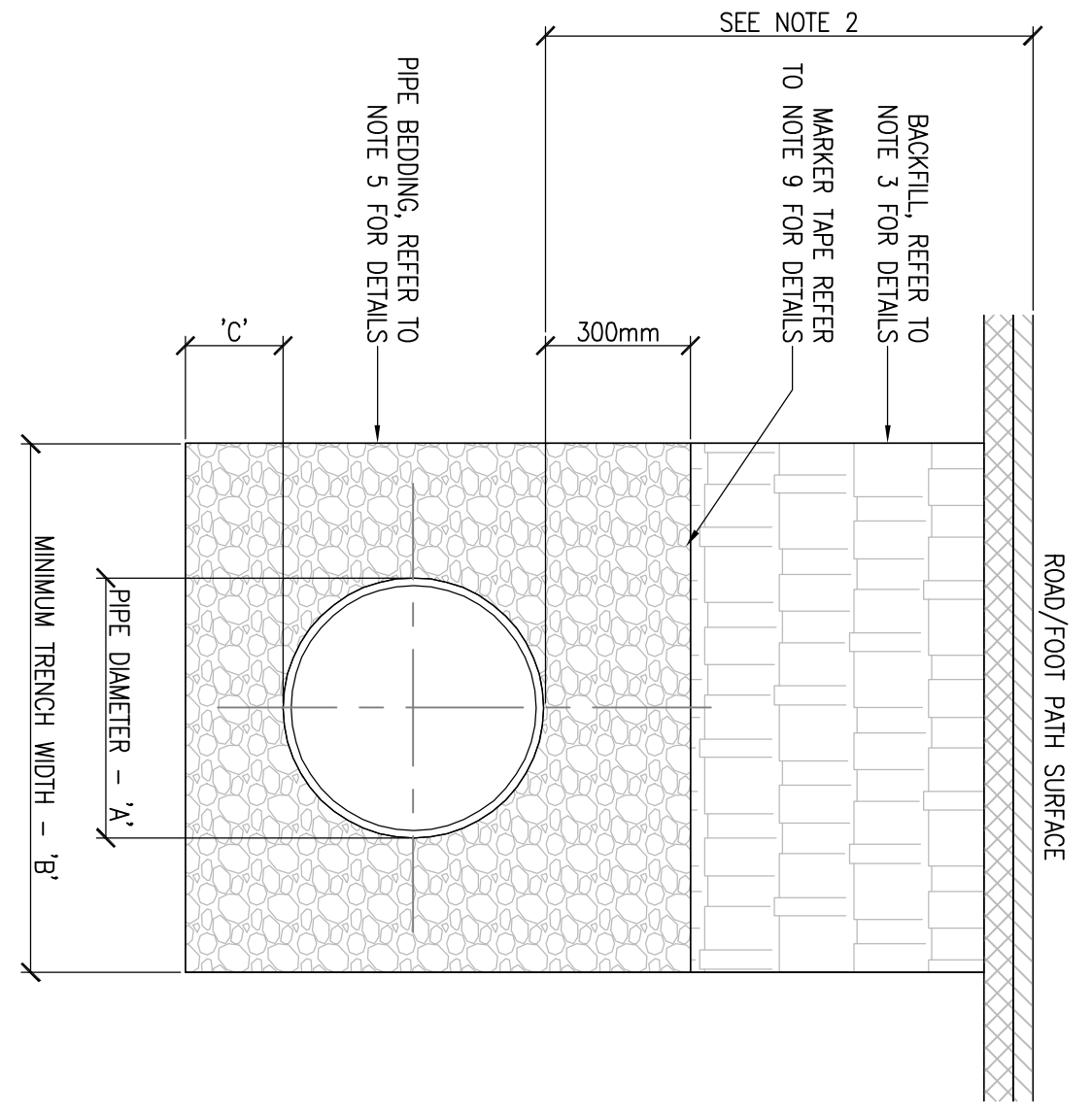


**TYPICAL SEWER/SERVICE PIPE CONNECTION - STD-W-W-04**  
SCALE N.T.S.

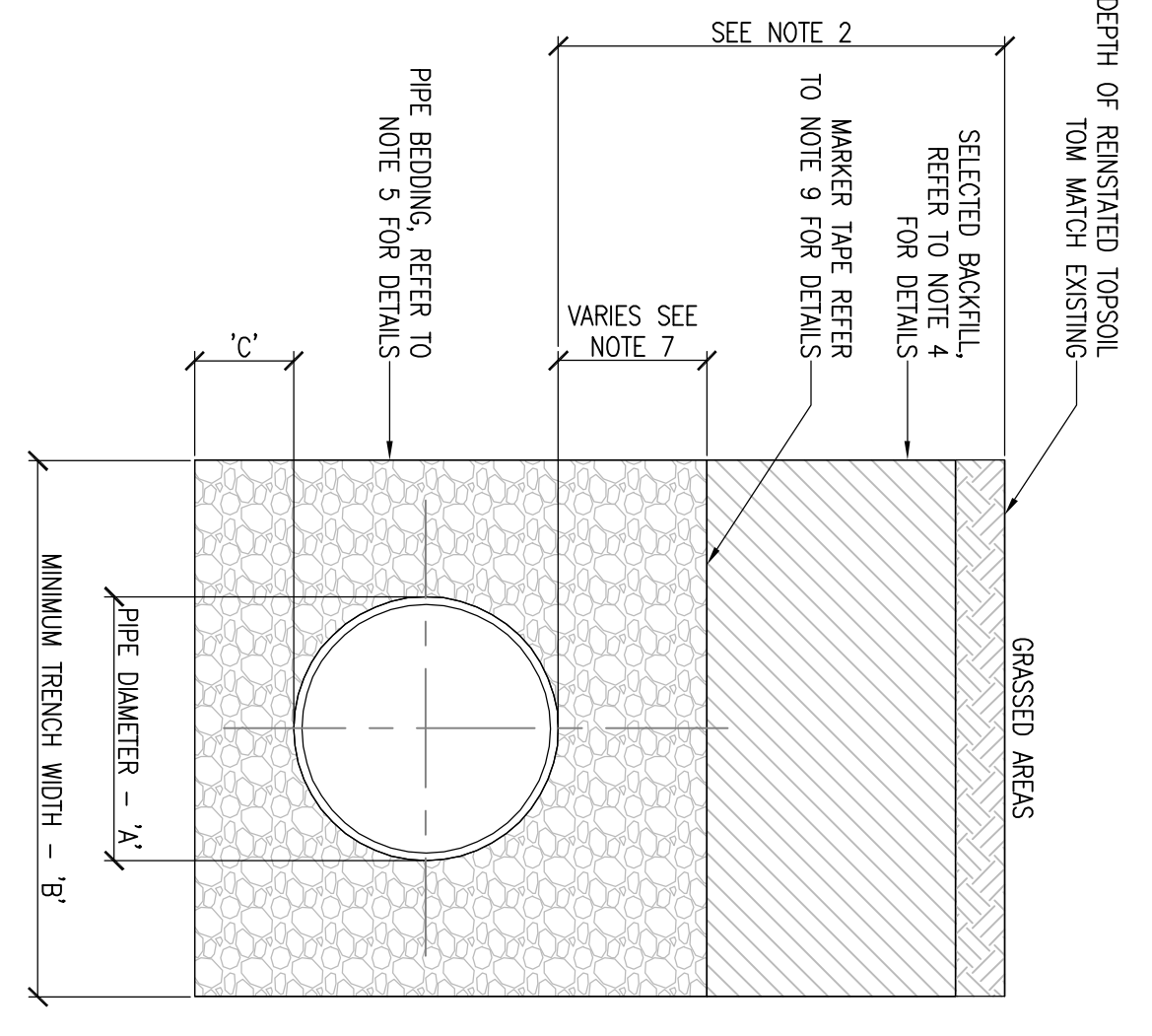


**SPIGOT & SOCKET JOINT**  
SCALE N.T.S.

**CONCRETE BED, HAUNCH & SURROUND TO WASTEWATER PIPES STD-W-W-08**



**CROSS SECTION IN ROADS**  
SCALE N.T.S.



**CROSS SECTION IN GRASSED AREAS**  
SCALE N.T.S.

- NOTES:**
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/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.
  6. POLYETHYLENE PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6078 BEFORE BEING CAST INTO CONCRETE.
  7. BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.

**TRENCH BACKFILL & FILLING**  
STD-W-W-07

- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
  2. THE MINIMUM DEPTH OF COVER FROM THE FINISHED SURFACE TO THE CROWN OF GRANULATED 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 UNSERVICEABLE AND SHOULD BE INSTALLED IN ACCORDANCE WITH THE CURRENT BUILDING REGULATIONS).
    - b. DRIVEWAYS, PARKING AREAS AND YARDS WITH HEIGHT RESTRICTIONS TO PREVENT ENTRY BY VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.75m.
    - c. DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (E.G. MENS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9m.
    - d. DEPTHS OF SEWERS IN GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
    - e. AGRICULTURAL LAND AND PUBLIC OPEN SPACE - DEPTH NOT LESS THAN 0.9m.
  3. 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.
  4. 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 OTHER PUBLIC AREAS. THE NEAREST PART OF THE TRENCH IS WITHIN 1m OF THE EXPOSED EDGE OF THE ROADWAY, CLAUSE 808 IS TO BE REPLACED BY 200mm GRANULATED BED OF THE NATIONAL ROADS AUTHORITY SPECIFICATION FOR ROAD WORKS.
  5. SELECTED EXCAVATED MATERIAL MAY BE USED IN GREEN-FIELD AREAS ABOVE GRANULAR PIPE SURROUND MATERIAL SUBJECT TO THE APPROVAL OF IRISH WATER.
  6. PIPE BEDDING SHALL COMPLY WITH WIS 4-08-02 AND IEN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE IS EN 12324; CONCRETE BED, HAUNCH & SURROUND, WHERE REQUIRED, SHALL BE TO STD-W-W-08.
  7. IN SOFT GROUND CONDITIONS (CR < 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. 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.
  8. 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.
  9. PIPES SHALL NOT BE SUPPORTED ON STONES, ROCKS OR ANY HARD OBJECTS AT 150mm FROM ABOVE THE TRENCH SOAK. SHALL BE EXCAVATED TO A DEPTH OF 150mm BELOW THE BOTTOM OF THE TRENCH TO THE BED OF 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.
  10. 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.
  11. TRENCH WIDTHS FOR PIPE SIZES 80mm MAY BE < 300mm, SUBJECT TO CONSIDERATION BEING GIVEN TO THE TRENCH DEPTH, HEALTH & SAFETY & CONSTRUCTION ACCESS REQUIREMENTS.

**GENERAL NOTES:**

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS' SERVICE ENGINEERS DRAWINGS & SPECIFICATIONS.
2. ALL LEVELS ARE STRUCTURAL UNLESS NOTED OTHERWISE.
3. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE RELEVANT BUILDING REGULATIONS.
4. DO NOT SCALE - WORK TO FIGURE DIMENSIONS ONLY.

**QUALITY**  
EN 9120:2000  
IR 60000  
IWA Certified

**ENGINEERS IRELAND**  
cpd  
ACCREDITED COMPANY

Rev.	Date	Issue register	Drawn	Checked	Approved
1	24.11.17	PROGRESS ISSUE	CT	PT	NS
2	12.01.18	FINAL B ISSUE	CT	PT	NS

**Revised Drawing**  
Orig Title

**Client:** KILDARE COUNTY COUNCIL

**Job Description:** SOCIAL HOUSING UNITS  
CASTLEFIN SALINGS, Co. KILDARE

**Scale:** PART 8 ISSUE

**Project No:** 16KR042

**Project Ref:** C-056

**Date:** 10.10.17

**Scale:** A1 - N.T.S.

**Drawn By:** CZUCCO

**Checked By:** PRUNCHERON

**Approved By:** NPATTERSON

**Project Name:** IW STANDARD WASTEWATER DETAILS

**Company:** Hayes Higgins Partnership  
Gas House Lane, Kildenny, Co. Wick

0044 7744211 (0044 772333) info@higginshiggins.com  
24 Parnassus Street, Suite 3, (01) 4522233 (01) 4522234