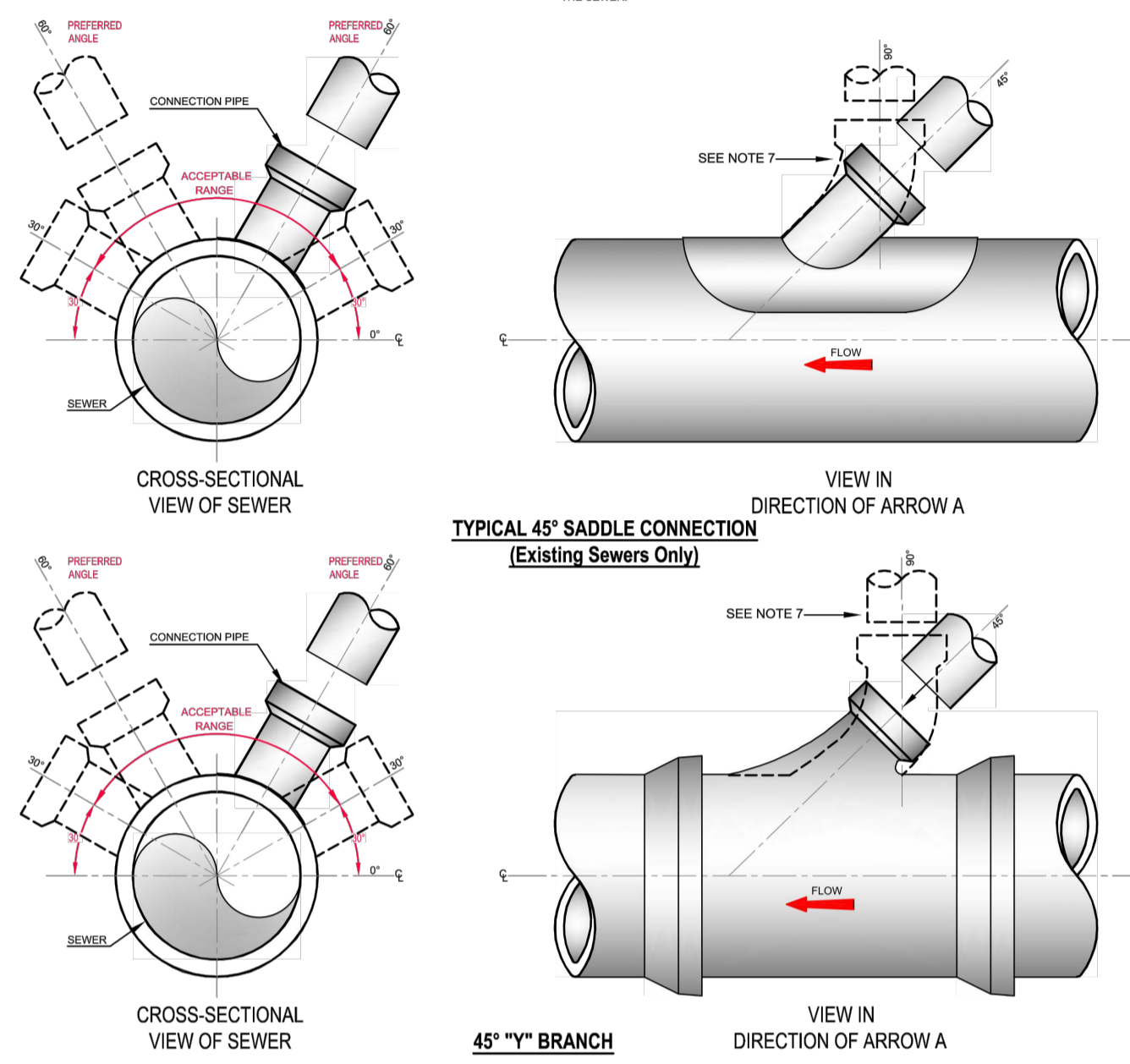


- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- AS FAR AS PRACTICABLE, JUNCTIONS AND SERVICE CONNECTIONS SHALL BE BUILT IN FOR ALL PLANNED USERS WHEN THE SEWER IS BEING CONSTRUCTED. WHERE IT IS NECESSARY TO MAKE A POST-CONSTRUCTION CONNECTION THE DEVELOPER SHALL BRING THE SERVICE CONNECTION TO THE INSPECTION CHAMBER AND SEAL THE UPSTREAM END UNTIL THE CONNECTION IS REQUIRED.
- THE VERTICAL ANGLE BETWEEN THE SERVICE CONNECTING PIPE AND THE HORIZONTAL SHALL BE WITHIN THE ACCEPTABLE RANGE OF 30° TO 90°.
- WHERE THE SERVICE PIPE CONNECTION WITHIN THE FOOTPRINT OF THE SELF-LAY AGREEMENT IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER OF 300mm DIAMETER OR LESS, CONNECTIONS SHALL BE MADE USING 45° ANGLE JOINTS.
- WHERE THE CONNECTION IS BEING MADE TO A SEWER WITH A NOMINAL INTERNAL DIAMETER GREATER THAN 300mm, THE FOLLOWING SHALL APPLY:
  - WHERE THE DIAMETER OF THE CONNECTING PIPE IS GREATER THAN HALF THE DIAMETER OF THE SEWER, AN ACCESS MANHOLE SHALL BE CONSTRUCTED TO FORM THE CONNECTION POINT. OR,
  - WHERE 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 45° BRANCH FITTING WITH A 45 DEGREE BEND TO FORM THE CONNECTION TO THE WORKS.
- CONNECTIONS USING SADDLES MAY ONLY BE USED IN EXCEPTIONAL CIRCUMSTANCES AND ONLY TO WHERE THE CONNECTION IS TO AN EXISTING SEWER. CONNECTIONS MADE WITH SADDLE FITTINGS SHALL BE MADE BY CUTTING AND SAFELY REMOVING A CORE FROM THE PIPE AND JOINING THE SADDLE FITTING TO THE PIPE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS TO ENSURE A WATER-TIGHT JOINT. THE CONNECTING PIPE SHALL NOT PROTRUDE INTO THE SEWER.
- THE USE OF 90° BRANCH OR SADDLE CONNECTIONS TO THE SEWER MAY BE ALLOWED, PROVIDED THE SADDLE OR BRANCH INCORPORATES A SWEEP TEE CONNECTION TOWARDS THE DIRECTION OF FLOW OF THE SEWER.



STD-WW-04 TYPICAL SEWER/SERVICE PIPE CONNECTION

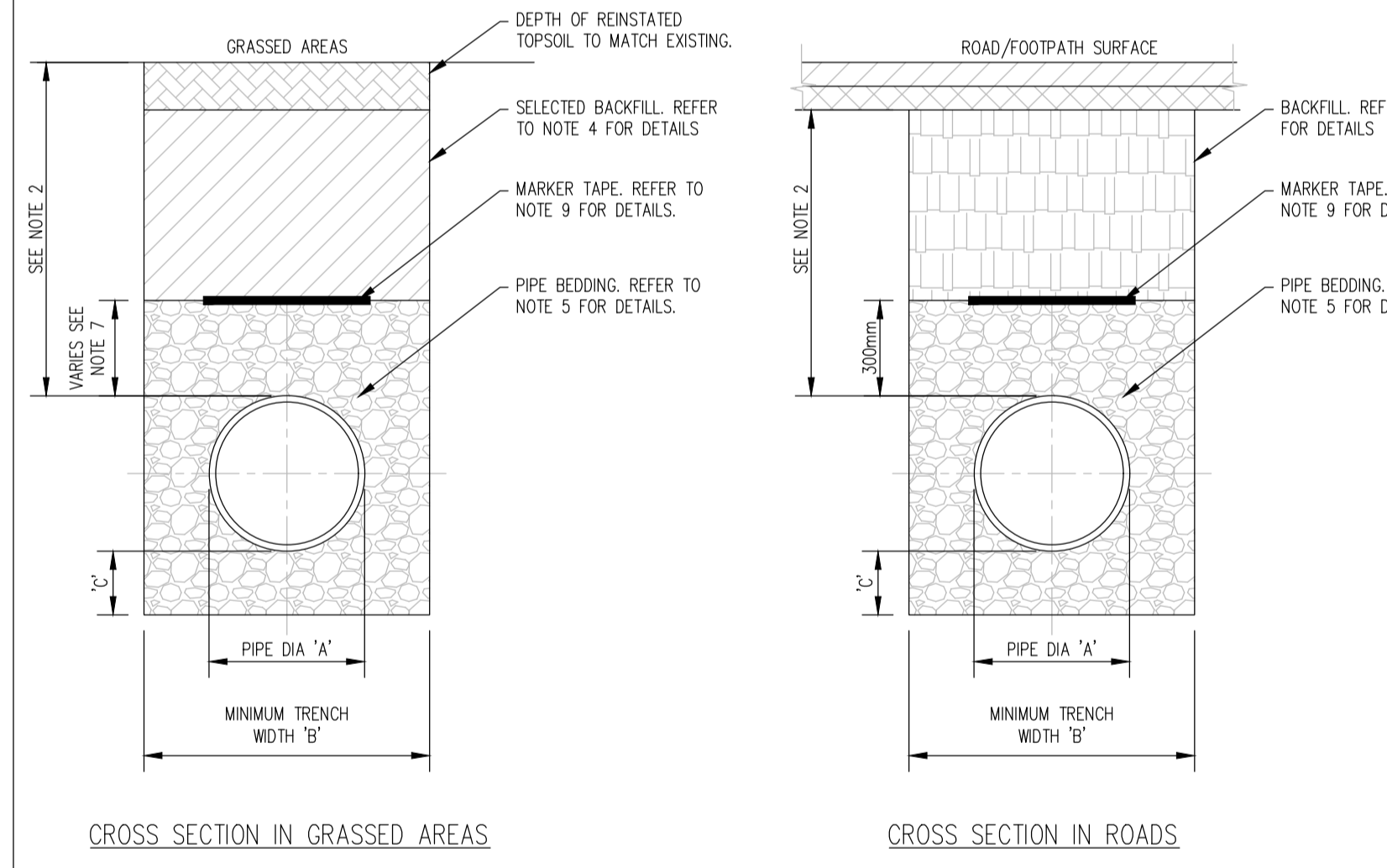
**NOTES:**

- 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 SHALL BE AS FOLLOWS:
  - GARDENS AND PATHWAYS WITHOUT ANY POSSIBILITY OF VEHICULAR ACCESS - DEPTH NOT LESS THAN 0.5M (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 0.75m.
  - DRIVEWAYS, PARKING AREAS AND NARROW STREETS WITHOUT FOOTWAYS (EG MEWS DEVELOPMENTS) WITH LIMITED ACCESS FOR VEHICLES WITH A GROSS VEHICLE WEIGHT IN EXCESS OF 7.5 TONNES - DEPTH NOT LESS THAN 0.9m.
  - DEPTHS OF SEWERS IN GATED ESTATES SHALL BE SIMILAR TO THAT OUTLINED ABOVE.
  - AGRICULTURAL LAND AND PUBLIC OPEN SPACE - DEPTH NOT LESS THAN 0.9m.
  - 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 WS 4-08-02 AND IGN 4-08-01 GRANULAR MATERIAL SHALL BE 14mm TO 5mm GRADED AGGREGATE OR 10mm SINGLE SIZED AGGREGATE IS EN 12642. CONCRETE BED, HAUNCH & SURROUND, WHERE REQUIRED, SHALL BE TO STD-WW-08.

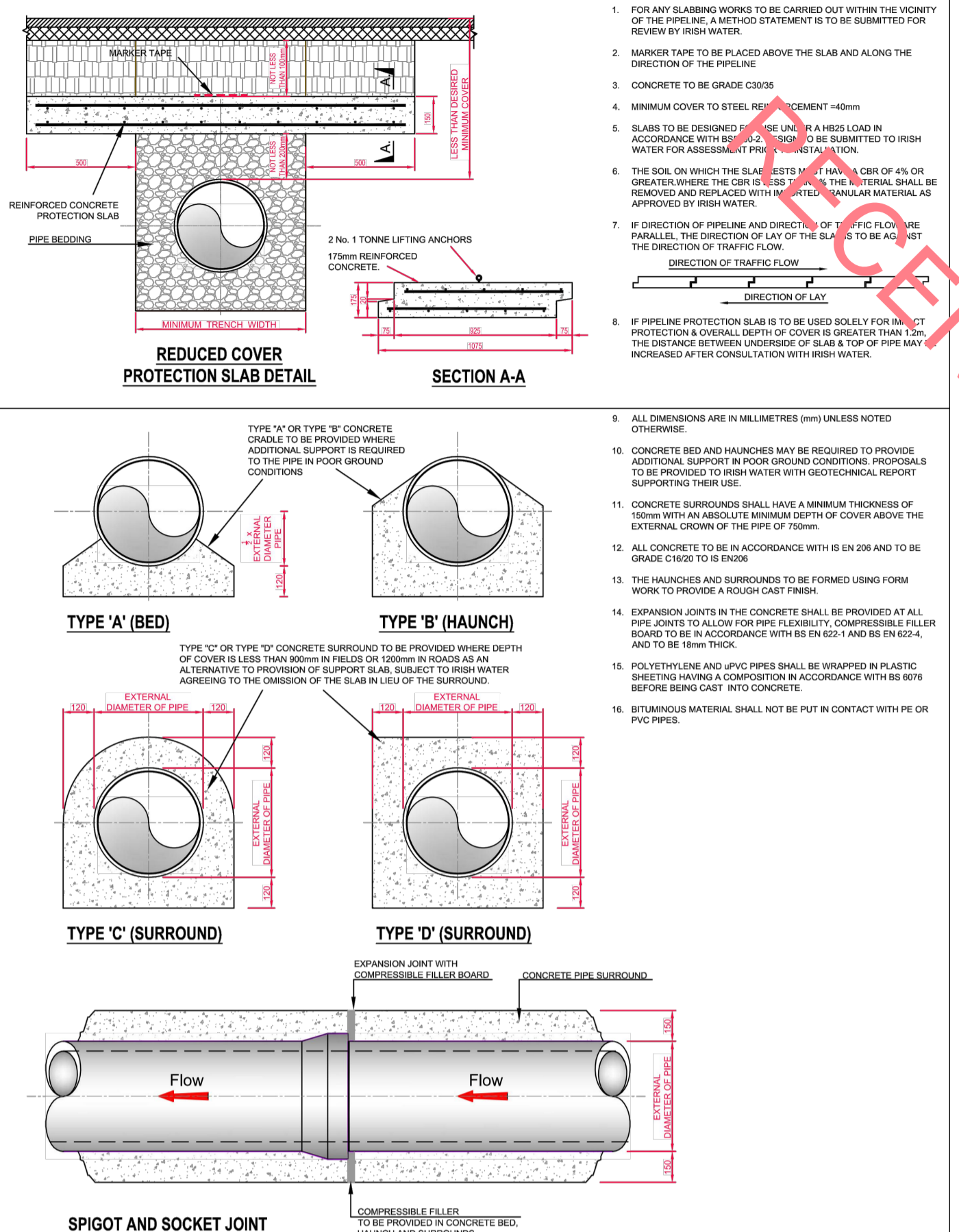
PIPE DIAMETER 'A' (mm)	DEPTH OF BEDDING 'C' (mm)
< 80 RISING MAIN	< SEE NOTE 10.
< 100	100
150 - 450	200
600	200

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
600	1250

- 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.

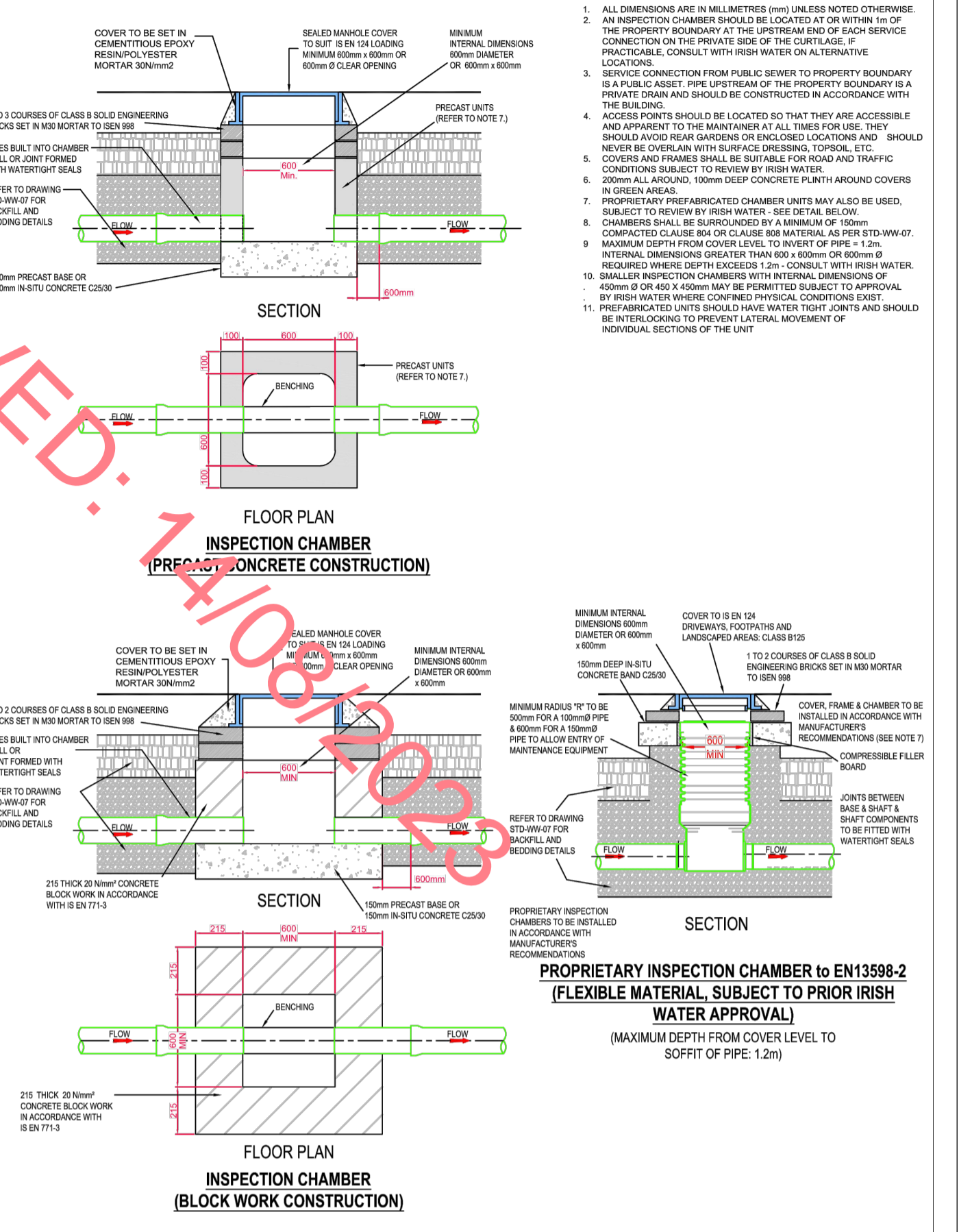


TRENCH BACKFILL AND BEDDING (STD - WW - 07) SCALE 1:20



STD-WW-08 CONCRETE PROTECTION SLAB, BED, HAUNCH, AND SURROUND, TO WASTEWATER PIPES

- FOR ANY SLABING WORKS TO BE CARRIED OUT WITHIN THE VICINITY OF THE PIPELINE, A METHOD STATEMENT IS TO BE SUBMITTED FOR REVIEW BY IRISH WATER.
- MARKER TAPE TO BE PLACED ABOVE THE SLAB AND ALONG THE DIRECTION OF THE PIPELINE.
- CONCRETE TO BE GRADE C30/35.
- MINIMUM COVER TO STEEL REINFORCEMENT = 40mm.
- SLABS TO BE DESIGNED TO RESIST A REDUCED LOAD IN ACCORDANCE WITH BS EN 1991-2. TO BE SUBMITTED TO IRISH WATER FOR ASSESSMENT PRIOR TO INSTALLATION.
- THE SOIL ON WHICH THE SLAB RESTS MUST HAVE A CBR OF 4% OR GREATER. IF THE CBR IS LESS THAN 4% THE MATERIAL SHALL BE REMOVED AND REPLACED WITH IMPROVED GRANULAR MATERIAL AS APPROVED BY IRISH WATER.
- IF DIRECTION OF PIPELINE AND DIRECTION OF 1.1 TFC FLOW ARE PARALLEL, THE DIRECTION OF LAY OF THE SLAB IS TO BE ADJUSTED TO BE PARALLEL TO THE DIRECTION OF TRAFFIC FLOW.
- IF PIPELINE PROTECTION SLAB IS TO BE USED SOLELY FOR POINT PROTECTION & OVERLAP DEPTH OF COVER IS GREATER THAN 1.2m, THE DISTANCE BETWEEN UNDERSIDE OF SLAB & TOP OF PIPE MAY INCREASED AFTER CONSULTATION WITH IRISH WATER.
- ALL DIMENSIONS ARE IN MILLIMETRES (mm) UNLESS NOTED OTHERWISE.
- CONCRETE BEDS AND HAUNCHES MAY BE REQUIRED TO PROVIDE ADDITIONAL SUPPORT IN POOR GROUND CONDITIONS. PROPOSALS TO BE PROVIDED TO IRISH WATER WITH GEOLOGICAL REPORT SUPPORTING THESE USES.
- CONCRETE SURROUNDS SHALL HAVE A MINIMUM THICKNESS OF 100mm WITH AN ABSOLUTE MINIMUM DEPTH OF COVER ABOVE THE EXTERNAL CROWN OF THE PIPE OF 300mm.
- ALL CONCRETE TO BE IN ACCORDANCE WITH BS EN 206 AND TO BE GRADE C30/35 TO BE DONE.
- 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 TO BE IN ACCORDANCE WITH BS EN 820-1 AND BS EN 820-2, AND TO BE SHOWN TRACK.
- POLYETHYLENE AND PVC PIPES SHALL BE WRAPPED IN PLASTIC SHEETING HAVING A COMPOSITION IN ACCORDANCE WITH BS 6078 BEFORE BEING CAST INTO CONCRETE.
- BITUMINOUS MATERIAL SHALL NOT BE PUT IN CONTACT WITH PE OR PVC PIPES.



STD-WW-13 PRIVATE SIDE INSPECTION CHAMBER

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Rev. No.	Date	REVISION NOTE	Drn. By	Chkd. By
P1	12.12.2022	ISSUED FOR PLANNING	SC	NB
P2	16.06.2023	ISSUED FOR PLANNING	SC	NB
P3	09.08.2023	ISSUED FOR PLANNING	SC	NB

**Client**  
Keldrum Limited  
Large-scale Residential Development at Tinakilly, Wicklow

**Title**  
Drainage Details  
Sheet 2 of 4

**Dwg. No.**  
A034-CSC-ZZ-XX-DR-C-0010

**Date**  
Oct 2022

**Drn by**  
SC

**Chkd by**  
NB

**Apprd by**  
OS

**Scale**  
AS SHOWN @ A1

**Revision**  
P3

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