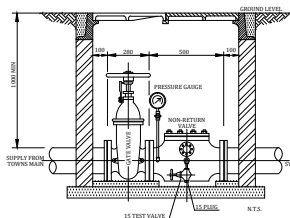
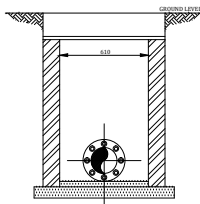


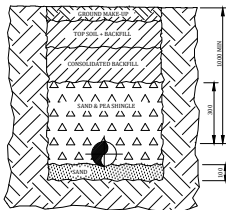
# UNDERGROUND PIPEWORK NOTES & WS1 DETAIL



WS1 VALVE PIP DETAIL



SECTION



TRENCH SECTION

## Trench Notes

- All excavations, builders work & backfilling by others, and to include for : 100m deep pipe bedding of sand, 300mm cover of mixed sand and pea shingle, 500mm of consolidated backfill and top soil backfill as existing.
- The trench must have sufficient depth for a minimum cover of pipe of 1000mm. The trench width must be the outside diameter of the pipe plus 800mm to allow for the laying and testing of the pipe. The trench sides are to be shored or similar as necessary to provide safe working within the trench. All work to be carried out as to comply with the latest Health & Safety regulations.
- Adequate concrete thrust blocks are required at all changes in direction of pipework underground.
- On completion of the pipework installation the trench should be backfilled leaving all joints exposed. When the pipework has been successfully tested the backfilling can be completed.

## Underground Pipework - Civil Works

Notes for Guidance. Whilst we do not accept responsibility for civil works associated with the underground pipework, the following is issued, without prejudice, for guidance when preparing the pipe runs.

- Pipes are not to be supported by bricks or concrete blocks.
- If the ground is virgin and reasonably firm, pipes may be laid directly on the compacted trench bottom, with necessary depressions at the joints.
- Where the ground is soft and yielding, pipes are to be supported by a continuous raft of concrete shaped to the underside of the pipe. For P.V.C. pipework a minimum bedding of 100mm thickness should be interspersed between the underside of the pipe and the concrete.
- For P.V.C. pipework it is essential that the trench bottom is carefully prepared to provide a uniform flat support for the pipes to prevent the forming of air pockets, due to the flexibility of P.V.C. pipe which tends to follow ground undulations.
- The trench width should be as narrow as practicable, commensurate with good consolidation of side filling, but not less than the pipe diameter plus 300mm.
- Bedding and side filling materials to be carefully selected, see items 7 & 8.
- After laying the pipe, subject to item 9, the initial backfilling should be of a fine selected material, free from rocks, flints or other hard substances and carefully compacted around the pipe by hard ramming in uniform layers of 75mm thickness, to a minimum cover of 200mm above the top of the pipe to restrict subsequent movement, this is especially important for P.V.C. pipes.
- Above the initial backfill, and again subject to item 9, the excavation material should be backfilled taking care to preserve the original soil sequence, and compacted as far as possible to prevent subsequent settlement.
- In selecting material for backfilling, care should be taken to ensure that corrosive forces are not present which would have a deleterious effect on the pipework, such as acidic soils, clays, cinders or ash.
- Except where otherwise stated on the drawings, it is strongly recommended that the minimum depth of cover to the top of the pipe is one meter.
- In situations where the pipework is to be laid where rock is present, care should be taken to ensure that a minimum clearance of 150mm around the pipe is maintained.
- When designing thrust blocks the largest area of the fitting concerned is to be in contact with the block, always ensuring in the case of P.V.C. piping that a flexible membrane e.g. heavy polythene sheet, building felt, is interspersed between the pipe and block to prevent abrasion. Concrete should not normally be allowed to encase the fitting, but where unavoidable it is essential that in the case of P.V.C. piping the fitting is first wrapped with a flexible membrane up to a maximum thickness of 3mm. The shape of the thrust block should always be such that the largest surface area is at right angles to the resultant force shown.
- Thrust blocks to oppose the forces shown are to be designed and supplied by you/your civil contractor at all changes of direction of the underground pipework, including vertical rises or drops.