

WATERMAIN NOTES

W1 ALL INTERNAL AND EXTERNAL PLUMBING SHALL COMPLY WITH CURRENT REGULATIONS AND THE LOCAL AUTHORITY WATER BYE-LAWS AND REQUIREMENTS.
THE CONSTRUCTION OF THE WATERMAIN SHALL BE IN ACCORDANCE WITH THE BEST CURRENT PRACTICE AND THE LATEST EDITIONS OF THE RELEVANT STANDARDS AND CODE OF PRACTICE.

W2 APPLICATIONS FOR WATERMAINS CONNECTIONS MUST BE MADE AT LEAST 1 MONTH IN ADVANCE OF COMMENCEMENT OF WORKS ON SITE. THE CONTRACTOR SHALL NOTIFY THE LOCAL WATER AREA ENGINEER ONE WEEK PRIOR TO THE DATE ON WHICH IT IS PROPOSED TO COMMENCE WORK.

W3 A LOCAL AUTHORITY REPRESENTATIVE MAY INSPECT THE WORK FROM TIME TO TIME. THE CONNECTION TO THE COUNTY COUNCIL MAIN WILL ONLY BE GIVEN WHEN THE COUNTY COUNCIL IS SATISFIED THAT:
- THE WATERMAINS HAVE BEEN LAID IN ACCORDANCE WITH THE DBC GUIDELINES AND SPECIFICATIONS AND THE REVIEWED LAYOUT DRAWINGS APPROVED BY DBC.
- ALL INTERNAL AND EXTERNAL PLUMBING COMPLIES WITH CURRENT REGULATIONS AND THE LOCAL AUTHORITY WATER BYE-LAWS AND REQUIREMENTS.
- PRESSURE, CHLORINATION AND BACTERIOLOGICAL TESTS HAVE BEEN CARRIED OUT AND APPROVED.
- ALL PRODUCTS USED IN THE CONSTRUCTION OF THE WATERMAIN ARE FROM A LOCAL AUTHORITY APPROVED LIST.

W4 ALL PIPES SHALL HAVE A MINIMUM DEPTH OF COVER OF 750MM AND MAXIMUM DEPTH OF 900MM MEASURED FROM THE TOP OF THE PIPE TO THE FINISHED GROUND SURFACE.

W5 NO OTHER SERVICE IS TO BE LOCATED ABOVE OR WITHIN 500MM OF ANY WATERMAINS, UNLESS IT IS CROSSING OVER THE WATERMAIN AT RIGHT ANGLES, WHERE THERE MUST BE A MINIMUM OF 250MM VERTICAL CLEARANCE.

W6 ONLY DI PIPES ARE TO BE USED WHERE A WATERMAIN CROSSES A PUBLIC ROAD, EXCEPT WHERE OTHERWISE AGREED.

W7 NO PROPERTY SHALL BE MORE THAN 45M FROM A HYDRANT.
CONCRETE ANCHOR BLOCKS SHALL BE PROVIDED ON WATERMAINS AT DEAD ENDS, TEES, BENDS AND AT BOTH SIDES OF A SLUICE VALVE CHAMBER.
ANCHOR BLOCKS SHALL BE GRADE 30N20 CONCRETE.
BLOCKS SHALL BE TAKEN 150MM BELOW THE PIPE INVERT FOR THE FULL WIDTH OF TRENCH AND SHALL ENCASE THE PIPES TO 150MM OVER THE TOP OF THE BARREL.
THE MIN. LENGTH OF ANCHOR BLOCK SHALL BE 600MM FOR PIPES UP TO 150MM ϕ . FOR PIPES GREATER THAN 150MM ϕ THE MINIMUM LENGTH SHALL BE TAKEN AS 900MM.

W8 NO MATERIALS OTHER THAN MATERIALS LISTED BELOW SHALL BE USED WITHOUT THE PRIOR APPROVAL OF LOCAL AUTHORITY WATER SERVICES DEPARTMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL MATERIALS/FITTINGS TO BE USED ON THE SITE HAVE BEEN APPROVED FOR USE BY THE WATER SERVICES DEPARTMENT, LOCAL AUTHORITY IN ADVANCE OF WORK COMMENCING.

W9 THE PREFERRED WATERMAIN PIPE MATERIAL IS INDICATED ON THE FOLLOWING TABLE

SIZE OF PIPE (MM)	TYPE OF PIPE
100 TO 150	MOPVC, PVC-A, PE, DI
150 < 300	MOPVC, DI, PE
> 300	DI

ALL PLASTIC WATER PIPES SHALL BE BLUE IN COLOUR.
UPVC PIPES ARE NO LONGER ACCEPTED.
MOPVC PIPES SHALL CONFORM TO THE U.K. WRAC OR AN ALTERNATIVE LOCAL AUTHORITY APPROVED LIST.
DUCTILE IRON PIPES SHALL CONFORM TO CLASS K9 OF EN 545. DUCTILE IRON FITTINGS SHALL BE EITHER CLASS K9 OR K12. DUCTILE IRON PIPES AND FITTINGS SHALL BE LINED WITH A MATERIAL THAT IS APPROVED FOR CONTACT WITH DRINKING WATER.
PVC ALLOY PRESSURE PIPE SHALL CONFORM TO BS PA2 27. ALL FITTINGS SHOULD CONFORM TO THIS STANDARD ALSO.
PE PIPES SHALL CONFORM TO BS 6572 AND WATER INDUSTRIES SPECIFICATION 4.32.03 TO 4.32.05 (INCLUSIVE) AND 4.32.13.

W10 SERVICE PIPES & FITTINGS MATERIALS

MDPE PIPE AND FITTINGS. MDPE PIPE AND FITTINGS SHOULD BE OF TYPE PE-X80 AND HAVE AN SDR RATING OF 11. THEY SHALL CONFORM TO THE UK WATER INDUSTRY SPECIFICATION NO. 4-32-02 AND/OR BS 6572 FOR PIPE SIZES UP TO 63MM OD AND NO. 4-32-04 FOR FUSION JOINTS AND FITTINGS.

COPPER ALLOY FITTINGS. SHALL BE APPROVED GUNMETAL AND CONFORM TO BS 2872 OR BS 2874. (MATERIAL C2132 RESISTANT TO DE-ZINCIFICATION)

W11 THE DIAMETER OF THE SERVICE PIPE MUST BE APPROVED IN ADVANCE BY THE WATER SERVICES DEPARTMENT.

W12 ALL SERVICE PIPES SHALL INCLUDE THE INSTALLATION OF A BOUNDARY BOX WITH INTEGRAL STOPCOCK (NOTE THAT THE USE OF THE TRADITIONAL STOPCOCK HAS BEEN DISCONTINUED). THE BOUNDARY BOX COMPRISES OF A CONCENTRIC METER BOX WITH TELESCOPIC BODY AND CIRCULAR PLASTIC LID COMPLETE WITH SHUT-OFF VALVE, NON-RETURN VALVE AND PUSH-FITS OUTLETS (EXCLUDE METER IF DOMESTIC SUPPLY, METER REQUIRED FOR COMMERCIALS OPERATION). THE MINIMUM DEPTH FROM LID TO METER BASEPLATE IS 250MM AND THE LID STRUCTURE IS TO MATCH ITS REQUIRED LOADING. N.B. ALL METERS MUST BE COMPATIBLE WITH THE NON DOMESTIC WATER METERING SYSTEM.

W13 ONLY LOCAL AUTHORITY PERSONNEL ARE AUTHORISED TO INSTALL WATERMAIN TAPPINGS.

W14 ALL PROPERTIES MUST HAVE 24HOUR WATER STORAGE.

W15 SLUICE VALVES SHALL BE DOUBLE FLANGED; DUCTILE IRON RESILIENT SEAL GATE VALVES FOR WATERMAIN PURPOSES AND SHALL COMPLY WITH THE RELEVANT REQUIREMENTS OF EN1074. THE NUMBER OF TURNS TO OPEN/CLOSE THE VALVE MUST BE n \times 2n + 1 WHERE n+1 IS THE EQUIVALENT DIAMETER IN INCHES. ALL FLANGES SHALL BE DRILLED TO P.N. 16. THE SPINDLE SHALL BE FITTED WITH A CAST IRON OVAL FALSE CAP (COMPLETE WITH GRUB SCREW). DEPTH FROM GROUND LEVEL TO THE TOP OF THE VALVE SPINDLE MUST NOT BE GREATER THAN 600MM. THE OPERATING TORQUE SHOULD NOT EXCEED THE MAXIMUM ALLOWED IN EN 1074, WITH WRITTEN TEST RESULTS REQUIRED.
SLUICE VALVES SHALL BE COATED WITH AN ELECTROSTATIC EPOXY POWDER SPRAY, OR BITUMEN - TRICHLOROETHYLENE SOLUTION TO U.K. WRAC OR AN ALTERNATIVE LOCAL AUTHORITY APPROVED COATING.
ALL SLUICE VALVES ARE TO BE OPERATED FROM ABOVE GROUND WITH A VALVE KEY AND SHALL BE ANTI-CLOCKWISE CLOSING.

W16 BUTTERFLY VALVES SHALL BE DOUBLE FLANGED AND SHALL COMPLY WITH THE RELEVANT REQUIREMENTS OF EN1074. MANUALLY OPERATED BUTTERFLY VALVES ARE TO BE OPERATED FROM ABOVE GROUND WITH A LOCAL AUTHORITY VALVE KEY AND THE OPERATING TORQUE SHOULD NOT EXCEED THE MAXIMUM ALLOWED IN EN 1074. ALL FLANGES SHALL BE DRILLED TO P.N. 16.
BUTTERFLY VALVES SHALL BE COATED WITH AN ELECTROSTATIC EPOXY POWDER SPRAY, OR BITUMEN - TRICHLOROETHYLENE SOLUTION TO U.K. WRAC OR AN ALTERNATIVE LOCAL AUTHORITY APPROVED COATING.
ALL BUTTERFLY VALVES OPERATED BY A VALVE KEY SHALL BE ANTI-CLOCKWISE CLOSING.
ACTUATED BUTTERFLY VALVES WILL REQUIRE MANUAL OVER-RIDE FACILITY ORDNANCE SURVEY NUMBER N053060006 TO SUIT ITS LOCATION.
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WATERMAIN NOTES CONT.

W17 HYDRANTS SHALL BE MANUFACTURED IN ACCORDANCE WITH BS 750: 1984, TYPE 2 AND SHALL INCORPORATE A SCREW-DOWN VALVE, UNDERGROUND, GUIDE IN HEAD TYPE, WITH BAYONET LUG OUTLETS AND FALSE SPINDLE. THE HYDRANT VALVE SHALL BE CLOCKWISE CLOSING I.E. THE OPPOSITE OF A SLUICE VALVE.
HYDRANTS SHALL BE COATED WITH AN ELECTROSTATIC EPOXY POWDER SPRAY, OR BITUMEN - TRICHLOROETHYLENE SOLUTION TO U.K. WRAC OR AN ALTERNATIVE LOCAL AUTHORITY APPROVED COATING.
HYDRANTS (WHICH ARE PROVIDED FOR EMERGENCY SUPPLY) MAY NOT BE USED FOR ANY OTHER PURPOSE WITHOUT THE WRITTEN PERMISSION OF LOCAL AUTHORITY.

W18 AIR VALVES MUST COMPLY WITH THE REQUIREMENTS OF BS5159 AND ARE TO BE LOCATED AT SUMMITS OF WATERMAINS OR BESIDE TRUNK WATERMAIN BODY VALVES. LOCAL AUTHORITY REQUIRE THAT ALL AIRVALVES ARE DOUBLE ORIFICE TYPE AND INCLUDE AN ISOLATOR VALVE (TO ALLOW EASE OF REMOVAL WITHOUT DRAINING THE WATERMAIN). ANY OTHER TYPE OF AIRVALVE IS SUBJECT TO THE APPROVAL OF LOCAL AUTHORITY PRIOR TO CONSTRUCTION.

W19 WHERE IT IS NECESSARY TO USE A BREAK TANK AND BOOSTER SYSTEM (E.G. USUALLY BUILDINGS OF 4 STOREYS OR MORE), THE FOLLOWING CONDITIONS MUST BE COMPLIED WITH:
- FULL DETAILS OF THE SYSTEM TO BE SUBMITTED TO THE WATER SERVICES DEPARTMENT (INCLUDING PLUMBING LAYOUT, MAINTENANCE PROGRAMME, PUMP AND TANK DETAILS).
- THE RELEVANT STANDARDS AND SUPPLIERS CONDITIONS ARE ADHERED TO, PARTICULARLY THE FOLLOWING:
BS EN 1508:1999 REQUIREMENTS FOR SYSTEMS AND COMPONENTS FOR THE STORAGE OF WATER
THE EUROPEAN COMMUNITIES (DRINKING WATER) REGULATIONS 2007 ONLY INDIRECT PRESSURE BOOSTING WILL BE PERMITTED
SEPARATE INDEPENDENT DRINKING WATER SUPPLY (100UR STORAGE NOT EXCEEDED) AND 24HR STORAGE SUPPLY IS REQUIRED (ONE BREAK TANK FOR DRINKING WATER AND ANOTHER BREAK TANK FOR 24HR STORAGE).

W20 VALVES AND HYDRANTS WHEN INSTALLED SHALL BE COVERED WITH APPROVED HEAVY-DUTY METAL SURFACE COVERS TO I.S. EN 124: 1994.

W21 HYDRANT INDICATOR PLATES AND BASEBOARDS SHALL COMPLY WITH B.S. 3251 WHILE SLUICE VALVE INDICATOR PLATES AND BASEBOARDS SHALL COMPLY WITH THE LOCAL AUTHORITY REQUIREMENTS. THEY SHALL BE MOUNTED AT THE BOUNDARY OF THE PUBLIC THOROUGHFARE NEAREST TO THE HYDRANT OR VALVE.

W22 ALL PIPEWORK SHALL HAVE A 400MM WIDE WATER WARNING MESH - PLYAGE HR 40D BLUE POLYETHYLENE WARNING MESH OR SIMILAR - LAID DIRECTLY OVER THE CENTRE LINE OF THE PIPELINE AND TIED TO VALVES, AT A DEPTH OF 350MM BELOW THE FINISHED GROUND SURFACE. SUPPLY PIPES SHALL HAVE A MESH 200MM WIDE LAID AT THE SAME DEPTH.

W23 ALL PIPES SHALL BE EXAMINED INTERNALLY FOR DIRT, STONES, OR ANY FOREIGN MATTER AND SHALL BE THOROUGHLY CLEANED BEFORE LAYING IN FINAL POSITION, TO PREVENT FOREIGN MATTER OR VERMIN ENTERING THE MAIN AS IT IS BEING LAID, ALL OPEN ENDS OF LAID PIPES SHALL BE PLUGGED UNTIL THE NEXT PIPE IS READY FOR INSERTION.

W24 ALL PIPES SHALL BE LAID ON A 150MM BED OF ROUNDED SINGLE SIZED PEBBLE OF 10MM NOMINAL DIAMETER AND HAUNCHED AND COVERED TO A DEPTH OF 150MM WITH SIMILAR MATERIAL. PIPES SHALL NOT BE SUPPORTED BY STONE OR ROCK AT ANY POINT. ROCK SHALL BE EXCAVATED TO A DEPTH OF 150MM BELOW THE ACTUAL DEPTH OF TRENCH REQUIRED AND BACKFILLED WITH DOE CLAUSE 805 PRIOR TO LAYING THE PEBBLE BED. IN GROUND THAT CONTAINS ASHES OR CHEMICALS OR MATERIAL THAT COULD ACCELERATE CORROSION OR DEGRADATION OF THE PIPE, THE MATERIAL TO BE USED AND METHOD OF LAYING SHALL BE AGREED IN WRITING WITH THE LOCAL AUTHORITY WATER SERVICES DEPARTMENT PRIOR TO LAYING.

W25 ALL TRENCHES IN OR NEAR ROADWAYS SHALL BE BACKFILLED AND REINSTATED IN ACCORDANCE WITH THE TRANSPORTATION DEPARTMENT REQUIREMENTS.

W26 AFTER THE PIPES HAVE BEEN LAID AND JOINTED, THE MAIN SHALL BE TESTED AS OUTLINED BELOW.

PRESSURE TEST
THE CONTRACTOR IS RESPONSIBLE FOR TESTING THE WATERMAIN. THE WATERMAIN SHALL BE SUBJECT TO 10 BAR OR 1 1/4 TIMES ITS NORMAL WORKING PRESSURE, WHICHEVER IS THE GREATER PRESSURE, FOR 1 HOUR IN THE PRESENCE OF A REPRESENTATIVE OF LOCAL AUTHORITY.
TESTING SHALL BE CARRIED OUT BETWEEN SUITABLY SUPPORTED BLANK END PIECES. TESTING BETWEEN 'LIVE' SHUT VALVES WILL NOT BE ACCEPTED. WATERMAINS ARE TO BE TESTED PRIOR TO ANY SERVICE PIPE TAPPINGS INSTALLED ON THE WATERMAIN (OTHER THAN THOSE REQUIRED FOR FILLING THE WATERMAIN).

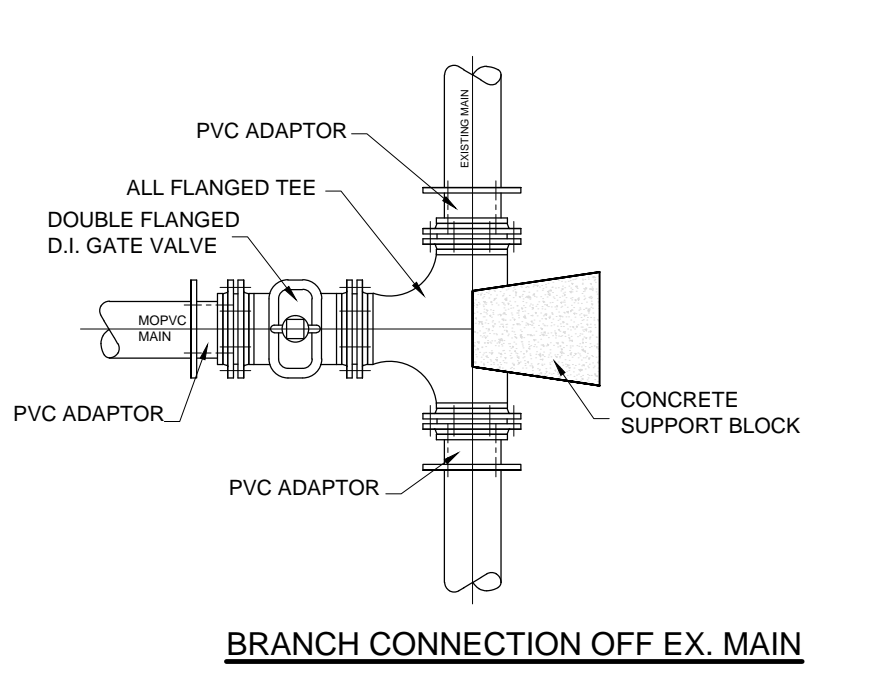
CHLORINATION TEST
ALL MAINS SHALL BE SWABBED AND DISINFECTED BEFORE BEING PUT IN TO SUPPLY. THE PIPELINES SHALL BE DISINFECTED WITH WATER HAVING A MINIMUM CONCENTRATION OF 20MG/L OF FREE CHLORINE. THE WATER SERVICES DEPARTMENT WILL CARRY THIS OUT WITH THE ASSISTANCE OF THE CONTRACTOR.
THE CHLORINATED WATER SHALL BE LEFT IN THE MAIN FOR A PERIOD OF AT LEAST 24 HOURS. CHLORINE RESIDUAL TESTS SHALL BE TAKEN AT THE END OF THE MAIN FURTHEST FROM THE POINT OF INJECTION. THE STERILISATION PROCESS SHALL BE REPEATED IF THE CHLORINE RESIDUAL IS LESS THAN 10MG/L.
ALL CHLORINATED WATER MUST BE DISPOSED OFF IN SUCH A MANNER AS NOT TO POSE A POLLUTION RISK.

BACTERIOLOGICAL TEST
THE MAIN SHALL THEN BE REFILLED AND THE CONTRACTOR WILL ORGANISE A SAMPLE OF THE WATER TO BE TAKEN FOR BACTERIOLOGICAL ANALYSIS. GREAT CARE SHALL BE TAKEN WHEN OBTAINING SAMPLES FOR TESTING AND ONLY STERILE CONTAINERS SHALL BE USED. THIS SAMPLING SHALL BE CARRIED OUT IN THE PRESENCE OF THE WATER INSPECTOR. SAMPLES SHALL BE TESTED WITHIN 6 HOURS OF COLLECTION. WATER SAMPLES MAY BE TESTED IN ANY APPROVED OR ACCREDITED LABORATORY.

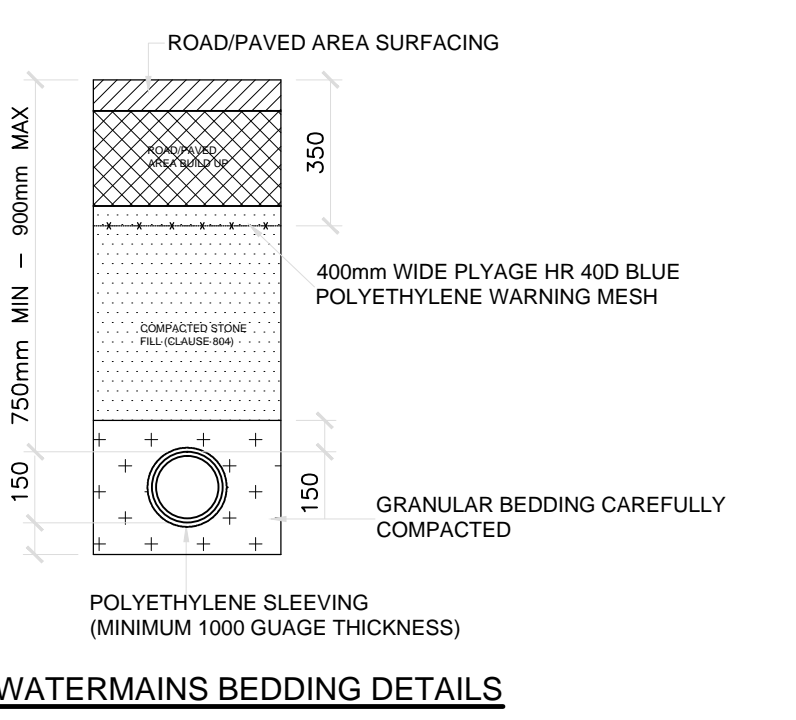
NOTE: THE WATER SERVICES DEPARTMENT WILL NOT CONNECT THE NEW MAIN TO THE EXISTING NETWORK UNTIL A COPY OF A SATISFACTORY BACTERIOLOGICAL TEST REPORT HAS BEEN SUBMITTED TO THE WATER SERVICES DEPARTMENT FOR APPROVAL.
LOCAL AUTHORITY RESERVE THE RIGHT TO TAKE AND TEST A SAMPLE AND FOR THE CONTRACTOR TO BEAR THE COSTS.

W27 CONNECTIONS TO MAINS, WHICH ARE THE PROPERTY OF THE LOCAL AUTHORITY, SHALL BE MADE BY LOCAL AUTHORITY ONLY. NO OTHER PERSON SHALL INTERFERE IN ANY WAY WITH THESE MAINS. SUCH CONNECTIONS SHALL BE MADE BY THE LOCAL AUTHORITY AT THE EXPENSE OF THE APPLICANT. THE ESTIMATED COST OF SUCH CONNECTIONS SHALL BE LODGED WITH LOCAL AUTHORITY BEFORE THE WORK IS UNDERTAKEN. ALL BRANCH CONDITIONS OUTLINED BY WATER OPERATIONS MUST BE COMPLIED WITH OTHERWISE THE CONNECTION WILL NOT BE GIVEN. TWO SETS OF AS-BUILT DRAWINGS FOR THE WATERMAINS LAYOUT AND A COPY ON CD MUST BE SENT TO THE RELEVANT WATER DEPOT. THE DRAWINGS ON CD MUST BE EITHER IN .DWG, .DGN, OR .DXF FORMAT AND REFERENCED TO THE NATIONAL GRID.

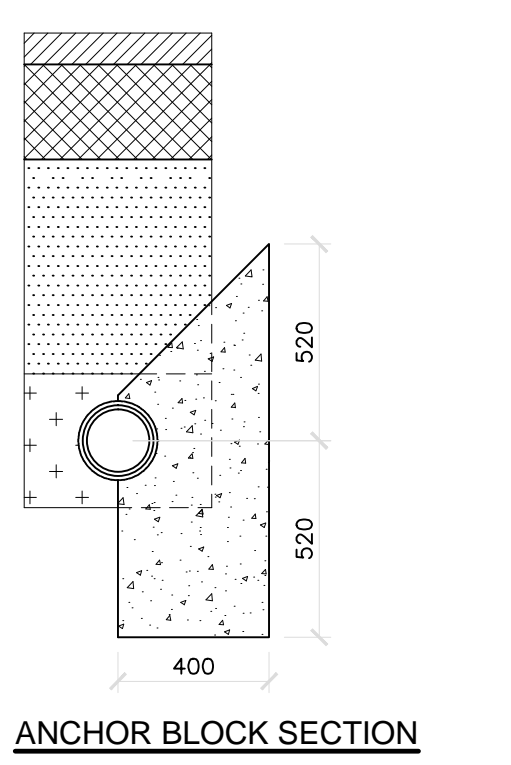
W28 WHEN MAINS HAVE BEEN SATISFACTORILY TESTED AND CONNECTED TO THE LOCAL AUTHORITY MAIN, THEY SHALL BE FLUSHED OUT WITH POTABLE WATER THROUGH A STANDPIPE PLACED ON THE END HYDRANT BEFORE THE MAIN IS BROUGHT INTO USE.



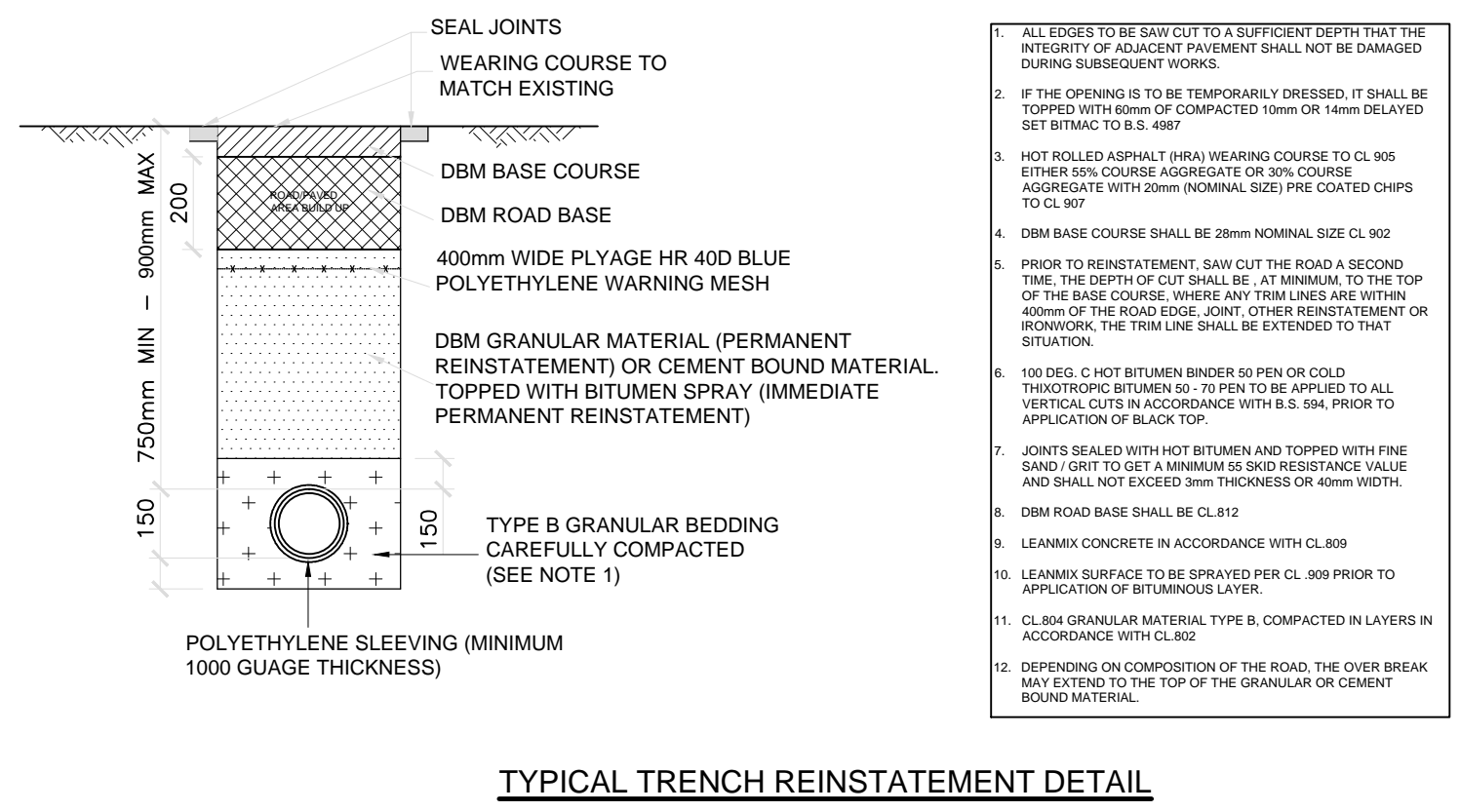
BRANCH CONNECTION OFF EX. MAIN



WATERMAINS BEDDING DETAILS

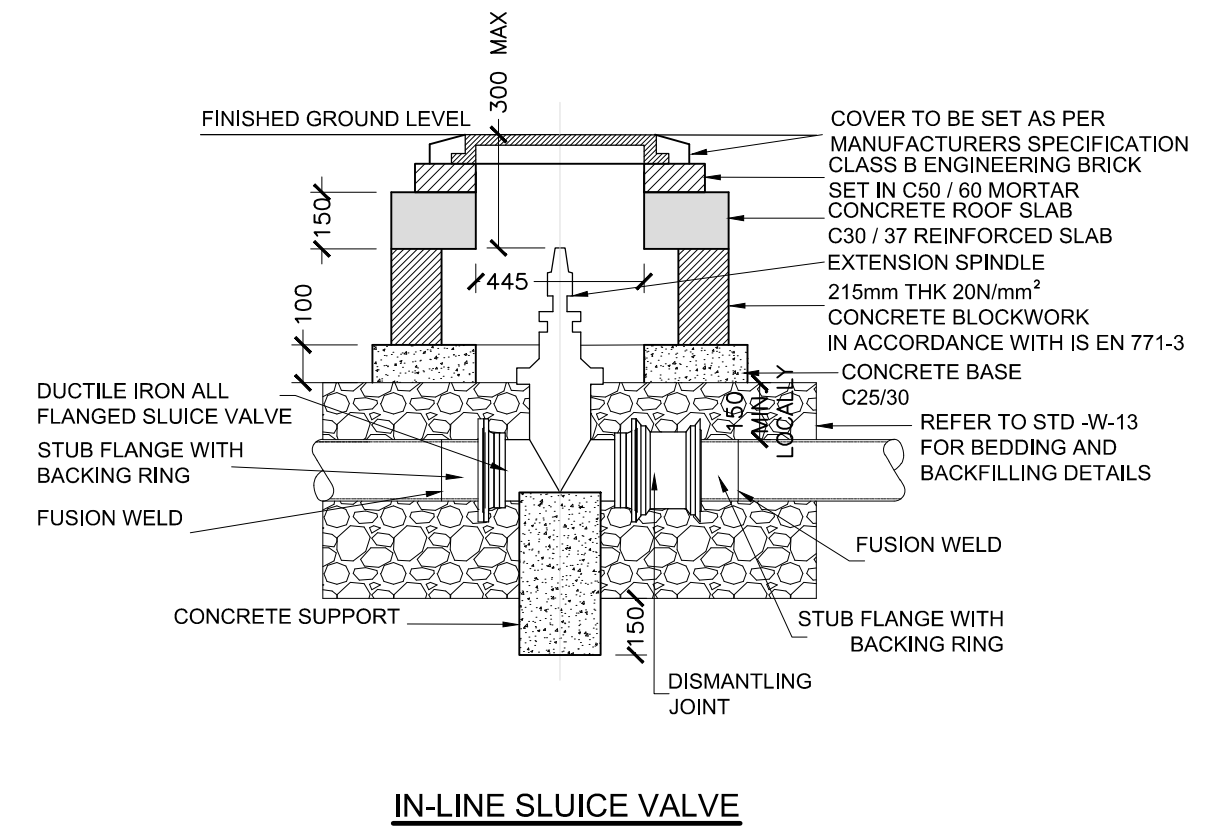


ANCHOR BLOCK SECTION

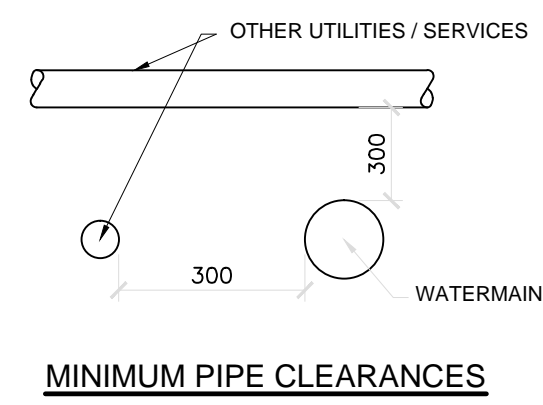


TYPICAL TRENCH REINSTATEMENT DETAIL

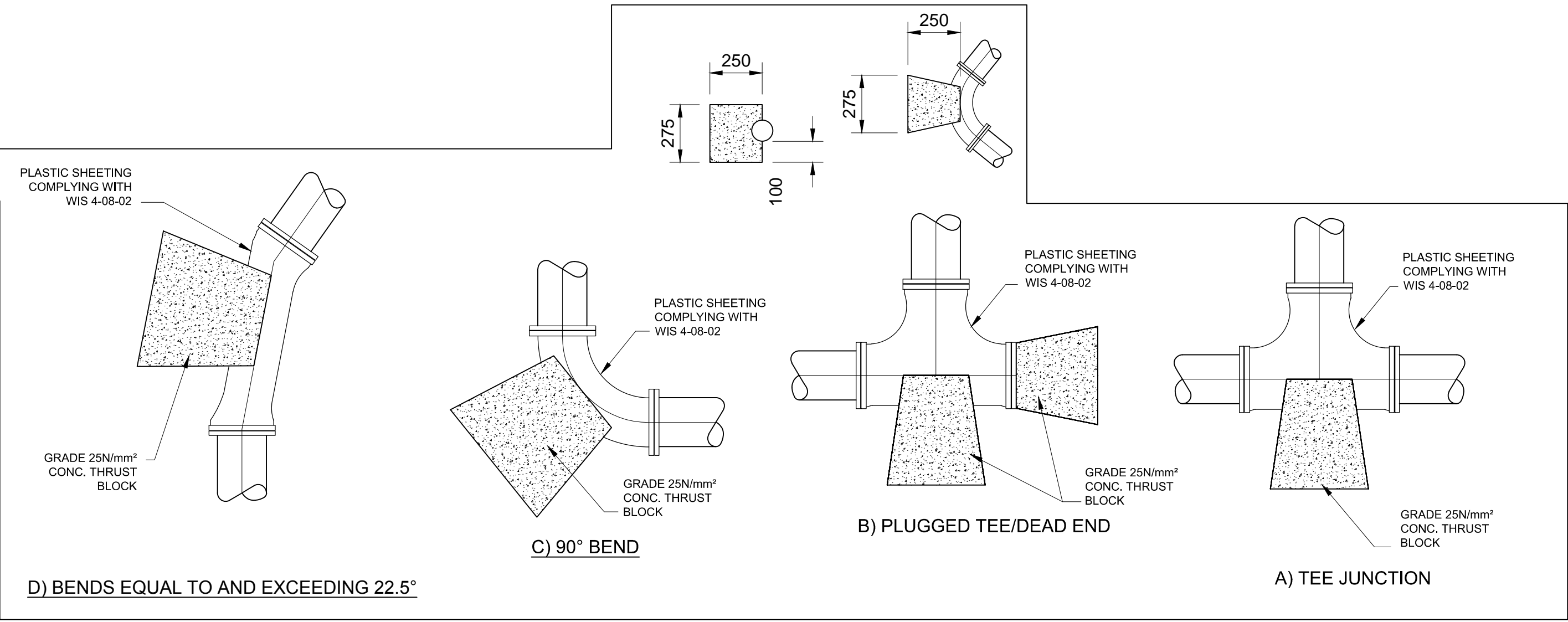
1. ALL EDGES TO BE SAW CUT TO A SUFFICIENT DEPTH THAT THE INTEGRITY OF ADJACENT PAVEMENT SHALL NOT BE DAMAGED DURING SUBSEQUENT WORKS.
2. IF THE OPENING IS TO BE TEMPORARILY DRESSED, IT SHALL BE TOPPED WITH 80MM OF COMPACTED 20mm OR 14mm DELAYED SET BITMAC TO BS 4987.
3. HOT ROLLED ASPHALT (HRA) WEARING COURSE TO CL 905 EITHER 50% COURSE AGGREGATE OR 20% COURSE AGGREGATE WITH 20mm (NOMINAL SIZE) PRE COATED CHIPS TO CL 907.
4. DBM BASE COURSE SHALL BE 28mm NOMINAL SIZE CL 902.
5. PRIOR TO REINSTATEMENT SAW CUT THE ROAD A SECOND TIME. THE DEPTH OF CUT SHALL BE 40mm TO THE TOP OF THE BASE COURSE. WHERE ANY TRAIL LINES ARE WITHIN 400mm OF THE ROAD EDGE, CONT. OTHER REINSTATEMENT OR BRICKWORK. THE TRAIL LINE SHALL BE EXTENDED TO THAT SITUATION.
6. 100 DEG. C HOT BITUMEN BINDER 60 PER OR COLD THEOTROPIC BITUMEN 50. TO PEN TO BE APPLIED TO ALL VERTICAL CUTS IN ACCORDANCE WITH B.S. 584. PRIOR TO APPLICATION OF BLACK TOP.
7. JOINTS SHALL BE SEALED WITH HOT BITUMEN AND TOPPED WITH FINE SAND (GRT) TO GET A MINIMUM 50 BOND RESISTANCE VALUE AND SHALL NOT EXCEED 3mm THICKNESS OR 40mm WIDTH.
8. DBM ROAD BASE SHALL BE CL 812.
9. LEANMA CONCRETE IN ACCORDANCE WITH CL 809.
10. LEANMA SURFACE TO BE SPRAYED PER CL 909 PRIOR TO APPLICATION OF BITUMINOUS LAYER.
11. CL 204 GRANULAR MATERIAL TYPE B, COMPACTED IN LAYERS IN ACCORDANCE WITH CL 802.
12. DEPENDING ON COMPOSITION OF THE ROAD, THE OVER BREAK MAY EXTEND TO THE TOP OF THE GRANULAR OR CEMENT BOUND MATERIAL.



IN-LINE SLUICE VALVE



MINIMUM PIPE CLEARANCES



D) BENDS EQUAL TO AND EXCEEDING 22.5°

C) 90° BEND

B) PLUGGED TEE/DEAD END

A) TEE JUNCTION

KEY PLAN			Client Comhairle Contae Fhine Gall <small>Fingal County Council</small>			Title STANDARD CONSTRUCTION DETAILS SHEET 2 of 3		
			Project HOLYWELL FOUL PUMPING STATION RELOCATION	Original Scale N.T.S.	Drawn MG	Checked GH	Authorised JN	
				Status P	Drawing Number RK5155181C011		Rev -	

Rev	Description	By	Date	Chk'd	Auth