



- DRAINAGE GENERAL**
- CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING OUT ALL DRAINAGE INFRASTRUCTURE TO ENSURE NO CLASHES OCCUR WITH SERVICE DUCTS, CHAMBERS ETC.
 - CARE SHOULD BE TAKEN BY THE CONTRACTOR WHEN HANDLING PIPES, PARTICULARLY WHEN UNLOADING AND STACKING, SO AS TO AVOID DAMAGING THEM.
 - ALL PIPE SEALS AND GASKETS SHOULD BE STORED INDOORS AWAY FROM DIRECT SUNLIGHT.
 - POLYETHYLENE TANKWALL ROAD DRAINAGE PIPES CONSISTING OF A DOUBLE WALL WHICH HAVE A SMOOTH INTERIOR AND RIBBED EXTERIOR WITH A SMOOTH BORE INTEGRAL SOCKET COUPLERS CONSIST OF A SINGLE WALL, WITH SMOOTH INTERIOR AND EXTERIOR SURFACES. SOIL-TIGHT AND WATER-TIGHT JOINTS ARE MADE BY FITTING A RUBBER SEALING RING OVER THE PIPE SPIGOT END AND THEN ASSEMBLING IT INTO THE INTEGRATED PIPE SOCKET OR COUPLER. INSTALLATION IN ACCORDANCE WITH MANUFACTURERS' GUIDELINES.
 - EXCAVATION SHOULD NOT BE CARRIED OUT TOO FAR IN ADVANCE OF PIPE INSTALLATION ALL RELEVANT HEALTH & SAFETY REQUIREMENTS IN RESPECT OF EXCAVATION SHOULD BE OBSERVED BY THE CONTRACTOR DURING EXCAVATION WORKS.
 - BEFORE LAYING THE PIPES AND FITTINGS MUST BE CHECKED FOR DAMAGE THAT MAY HAVE OCCURRED IN TRANSIT OR STORAGE PRIOR TO INSTALLATION. DAMAGED PIPES OR FITTINGS MUST NOT BE INSTALLED. THE LAYING SHOULD BE COMMENCED AT THE LOWER END OR OUTFALL END OF THE PIPELINE RUN AND THE PIPES ARE PREFERABLY LAID SO THAT THE SOCKETS FACE TO THE TOP OF THE PIPELINE RUN WHEN TWO PIPELINES ARE LAID SIDE BY SIDE. APPROPRIATE SEPARATION SHOULD BE ALLOWED TO PERMIT THE APPROPRIATE COMPACTION OF THE MATERIAL BETWEEN THE TWO PIPE RUNS.
 - THE PIPES ARE INSTALLED USING TRADITIONAL DRAIN LAYING METHODS IN ACCORDANCE WITH MSA SPECIFICATIONS AND IN ACCORDANCE WITH THE MCDW, VOLUME 1, CLAUSES 503, 505, 517 AND 518.8.
 - MINIMUM COVER TO PIPES:
 - 1200mm ROADWAYS
 - 900mm OPEN SPACES / FOOTPATHS NOT ADJACENT TO ROADS
 - 600mm GARDENS
 - THE CONTRACTOR SHOULD PLAN HIS WORK FOR CHAMBERS AND MANHOLES SO AS TO MINIMIZE AS MUCH AS POSSIBLE WORKING REQUIRED IN CONFINED SPACES.
 - JOINT LUBRICANTS FOR SLIDING JOINTS SHALL HAVE NO DELETERIOUS EFFECT ON EITHER THE JOINT RINGS OR PIPES AND SHALL BE UNAFFECTED BY SEWAGE.
 - ALL ABANDONED SEWER PIPES TO BE FILLED WITH C12/15 CONCRETE. ABANDONED MANHOLES TO BE BROKEN OUT IF POSSIBLE. OTHERWISE THEY SHOULD BE FILLED WITH C12/15 CONCRETE.
 - THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE RELEVANT SERVICE PROVIDERS IN ADVANCE OF ANY PLANNED EXCAVATION WORKS TO VERIFY THE LOCATION, DEPTH AND NATURE OF ANY UNDERGROUND SERVICES.
 - ROCKER PIPES:
 - ROCKER PIPES SHOULD BE PROVIDED AT ALL LOCATIONS WHERE:
 - A PIPE ENTERS OR LEAVES A MANHOLE, PUMPING STATION OR OTHER RIDGID STRUCTURE.
 - A PIPE ENTERS OR LEAVES A CONCRETE ENCASUREMENT.
 - ANY ROCKERS SHOULD BE DIRECTLY TO BE FORMED BY THE ENGINEER.
 - ROCKER PIPE JOINT TO BE LOCATED NO MORE THAN 150mm FROM THE OUTSIDE FACE OF THE STRUCTURE TO WHICH THE PIPEWORK IS SERVING. THE EFFECTIVE LENGTH OF THE ROCKERS SHOULD BE:
 - PIPE DIAMETER 150mm to 600mm: 0.66m
 - PIPE DIAMETER 600mm to 750mm: 1.00m
 - PIPE DIAMETER GREATER THAN 750mm: 1.25m
 - ALL ROCKERS PIPES ARE TO BE FORMED BY CUTTING AND TRIMMING A LENGTH OF SPIGOT & SOCKET PIPE TO FORM A SPIGOT AT THE CUT END, THEREBY FORMING SPIGOT & SOCKET JOINTS AT BOTH ENDS OF THE ROCKER PIPE.
 - PIPEWORK AND BENCHING TO A SINGLE MANHOLE CHAMBER SHOULD BE COMPLETED AND THE ENGINEER INVITED TO INSPECT SAME BEFORE ALL REMAINING CHAMBERS ARE COMPLETED.
 - ONLY PROPRIETARY CONNECTION PIECES TO BE USED FOR MAKING CONNECTIONS TO SEWERS.
 - WHEN INSTALLING FLEXIBLE PIPES (SINGLEWALL WALLED PVC OR SIMILAR) PARTICULAR CARE SHOULD BE TAKEN BY THE CONTRACTOR TO ENSURE THE PIPES ARE WELL BEDDED AND SURROUNDED IN 600 QUALITY GRANULAR MATERIAL IN ACCORDANCE WITH THE SPECIFICATION.
 - THE CONTRACTOR MUST TAKE GREAT CARE WHEN COMPACTING MATERIAL OVER DRAINAGE PIPES SO AS NOT TO DISLODGE THEM FROM THEIR CORRECT LINE AND LEVEL.
 - TYPE E BEDDING TO BE USED WHERE MINIMUM COVER OR GREATER IS PROVIDED TO FLEXIBLE PIPES.
 - FOR PIPES IN ROADWAYS WHERE COVER IS LESS THAN 1200mm BUT GREATER THAN 900mm TYPE G BEDDING TO BE USED.
 - FOR PIPES IN ROADWAYS WHERE COVER IS LESS THAN 900mm TYPE X BEDDING TO BE USED.
 - FOR PIPES IN OPEN SPACES, FOOTPATHS NOT ADJACENT TO ROADS AND GARDENS WHERE MINIMUM COVER OR GREATER IS NOT ACHIEVED, TYPE G BEDDING TO BE USED.
 - ALL MANHOLES TO BE CONSTRUCTED WITH PRECAST CONCRETE RINGS IN ACCORDANCE WITH RELEVANT ENGINEERS' DETAILS DRAWING.
 - PROPRIETARY CONNECTIONS TO BE USED THROUGHOUT.
 - ALL JOINTS TO BE WATER-TIGHT TO CL 504 SUB CLAUSE 3 OF THE MSA SPECIFICATION FOR ROADWORKS.
 - MANHOLES WITHIN PAVING TO BE D400 AND RECESSED TO RECEIVE PAVIORS.
 - MANHOLES IN TARMAC/GRASSED AREAS TO BE NON ROCK D400 LOCKABLE MANHOLES.
 - TRENCHES IN EXISTING SURFACES TO BE SAW CUT.
 - IF CONSTRUCTING MANHOLE CHAMBERS USING PRECAST CONCRETE RINGS, THE CONTRACTOR SHOULD ENSURE THAT THE JOINTS IN THE PRECAST CONCRETE RINGS ARE STAGGERED WITH THE JOINTS IN THE CONCRETE SURROUND TO REDUCE THE POSSIBILITY OF GROUND WATER INGRESS.
 - WHERE A CONNECTION IS REQUIRED TO AN EXISTING PUBLIC SEWER SYSTEM, THE CONTRACTOR MUST MAKE A FORMAL APPLICATION TO THE LOCAL AUTHORITY TO DO SO.
 - A DETAILED METHOD STATEMENT MUST BE SUBMITTED TO THE LOCAL AUTHORITY FOR APPROVAL. AT LEAST FOUR WEEKS IN ADVANCE OF THE PLANNED CONSTRUCTION WORKS.
 - WHERE NEW DRAINAGE INFRASTRUCTURE IS TO CROSS AN EXISTING ROAD, THE CONTRACTOR IS REQUIRED TO:
 - CONTACT THE RELEVANT AUTHORITIES WELL IN ADVANCE OF THE PLANNED WORKS.
 - MAKE AN APPLICATION AND PAY FOR A ROAD OPENING LICENCE IF APPLICABLE.
 - MAKE GOOD THE EXISTING ROAD TO THE SATISFACTION OF THE ENGINEER & THE RELEVANT AUTHORITIES ON COMPLETION OF THE WORKS. THE CONTRACTOR IS ADVISED TO COMPLETE AIR TESTING ON A DAILY BASIS DURING THE COURSE OF THE WORKS TO ENSURE ISOLATION OF ANY FAILED TESTS.
 - THE COMPLETE DRAINAGE WORKS SHOULD BE PROTECTED, WHERE NECESSARY, FROM LOADS IMPOSED BY CONSTRUCTION PLANT DURING CONSTRUCTION.
 - ON COMPLETION OF THE WORKS, THE CONTRACTOR MUST ENSURE ALL INTERNAL SURFACES OF THE NEW SEWERS ARE THOROUGHLY CLEANED TO REMOVE ALL DELETERIOUS MATERIAL. THIS MATERIAL MUST BE PREVENTED FROM ENTERING THE PUBLIC SEWER SYSTEM.
 - A CCTV SURVEY OF THE COMPLETED UNDERGROUND DRAINAGE NETWORK SHOULD BE CARRIED OUT BY THE CONTRACTOR ON COMPLETION OF THE WORKS. IT IS RECOMMENDED THAT THIS EXERCISE IS COMPLETED BEFORE FINAL SURFACE COURSES AND FINISHES ARE APPLIED IN CASE ANY REMEDIAL WORKS ARE REQUIRED TO THE DRAINAGE.
 - WHERE FOUR CONNECTIONS PASS OVER ATTENUATION TANKS, VERTICAL SEPARATION DISTANCE IS TO BE 300mm.

1 Proposed Surface Water Layout
Scale: 1:500