

SPECIFICATIONS

TRENCH WIDTH:

TRENCH WIDTH AT THE GROUND SURFACE MAY VARY DEPENDING ON DEPTH, TYPE OF SOIL AND POSITION OF SURFACE STRUCTURES. THE MINIMUM CLEAR WIDTH OF THE TRENCH, SHEETED OR UNSHEETED, MEASURED AT THE SPRINGLINE OF THE PIPE SHALL BE 18" OR 12" GREATER THAN THE OUTSIDE DIAMETER OF THE PIPE. THE MAXIMUM CLEAR WIDTH OF THE TRENCH AT THE TOP OF THE PIPE SHALL BE EQUAL TO THE PIPE OUTSIDE DIAMETER PLUS 2 FT. IF THE MAXIMUM RECOMMENDED TRENCH WIDTH MUST BE EXCEEDED OR IF THE PIPE IS INSTALLED IN A COMPACTED EMBANKMENT, THEN PIPE EMBEDMENT SHALL BE COMPACTED TO A POINT OF AT LEAST 2 1/2 PIPE DIAMETERS FROM THE PIPE ON BOTH SIDES OF THE PIPE OR TO THE TRENCH WALLS, WHICHEVER IS LESS.

DEWATERING:

WHERE CONDITIONS ARE SUCH THAT RUNNING OR STANDING WATER OCCURS IN THE TRENCH BOTTOM OR THE SOIL IN THE TRENCH BOTTOM DISPLAYS A "QUICK" TENDENCY, THE WATER SHALL BE REMOVED BY PUMPS AND OTHER SUITABLE MEANS (SUCH AS WELL POINTS OR PREVIOUS UNDERDRAIN BEDDING) UNTIL THE PIPE HAS BEEN INSTALLED AND THE BACKFILL HAS BEEN PLACED TO A SUFFICIENT HEIGHT TO PREVENT FLOTATION OF PIPE. GENERALLY, A DEPTH OF BACKFILL OVER THE TOP OF THE PIPE EQUAL TO 2 PIPE DIAMETERS WILL BE SUFFICIENT TO PREVENT FLOTATION.

PREPARATION OF TRENCH BOTTOM:

THE TRENCH BOTTOM SHALL BE CONSTRUCTED TO PROVIDE A FIRM, STABLE AND UNIFORM SUPPORT FOR THE FULL LENGTH OF THE PIPE. BELL HOLES SHALL BE PROVIDED AT EACH JOINT TO PERMIT PROPER ASSEMBLY AND PIPE SUPPORT. ANY PART OF THE TRENCH BOTTOM EXCAVATED BELOW GRADE SHALL BE BACKFILLED TO GRADE AND COMPACTED AS REQUIRED TO PROVIDE FIRM PIPE SUPPORT. WHEN AN UNSTABLE SUBGRADE CONDITION IS ENCOUNTERED THAT COULD PROVIDE INADEQUATE PIPE SUPPORT, ADDITIONAL TRENCH DEPTH SHALL BE EXCAVATED AND REFILLED WITH SUITABLE FOUNDATION MATERIAL. LEDGER ROCK, BOULDERS AND LARGE STONES SHALL BE REMOVED TO PROVIDE 4" OR MORE OF PEA GRAVEL CUSHION ON ALL SIDES OF THE PIPE AND ACCESSORIES.

LAYING OF PIPE:

TO PREVENT DAMAGE, PROPER IMPLEMENTS, TOOLS AND EQUIPMENT SHALL BE USED FOR PLACEMENT OF THE PIPE IN THE TRENCH. UNDER NO CIRCUMSTANCES SHALL THE PIPE OR ACCESSORIES BE DROPPED INTO THE TRENCH. ALL FOREIGN MATTER OR DIRT SHALL BE REMOVED FROM THE PIPE INTERIOR. PIPE JOINTS SHALL BE ASSEMBLED WITH CARE. WHEN PIPE LAYING IS NOT IN PROGRESS, OPEN ENDS OF INSTALLED PIPE SHALL BE CLOSED TO PREVENT ENTRANCE OF TRENCH WATER, DIRT, FOREIGN MATTER OR SMALL ANIMALS INTO THE LINE.

THRUST BLOCKING:

CONCRETE REACTION OR THRUST BLOCKING SHALL BE PROVIDED AT EACH HYDRANT, VALVE, BEND, TEE AND AT REDUCERS OR FITTINGS WHERE CHANGES OCCUR IN PIPE DIAMETER OR DIRECTION. CONCRETE BLOCKING SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 7-5, AWWA MANUAL NO. M23 "PVC - DESIGN AND INSTALLATION". THE CONTRACTOR SHALL NOT COVER OR BACKFILL OVER ANY CONCRETE THRUST BLOCKING UNTIL IT HAS BEEN INSPECTED AND MEASURED BY THE INSPECTOR. PRESSURE TESTING SHALL NOT BE CONDUCTED UNTIL A MINIMUM OF SEVEN DAYS CURING TIME HAS ELAPSED FOR BLOCKING POURED WITH NORMAL (TYPE I) PORTLAND CEMENT. THE MINIMUM CURING TIME MAY BE REDUCED TO THREE DAYS IF HIGH-EARLY STRENGTH (TYPE III) PORTLAND CEMENT IS USED. ALL CONCRETE SHALL BE LOW-SLUMP AND SHALL BE PLACED BY HAND WITH WOOD FORMS AND/OR PLASTIC SHEETING TO PREVENT BONDING AND HOOKING AROUND FITTINGS AND JOINTS. SOCKET WRENCH CLEARANCE SHALL BE PROVIDED BETWEEN THE CONCRETE AND ALL MECHANICAL JOINT AND FLANGE BOLTS. FULL CLEARANCE SHALL BE PROVIDED AROUND ALL PLUGGED BELLS TO ALLOW FUTURE REMOVAL AND LINE EXTENSIONS. THE CONTRACTOR SHALL MAKE ITS OWN DETERMINATION AS TO ADEQUACY OF ALL THRUST BLOCK LOCATIONS AND SIZE NECESSARY TO WITHSTAND THE REQUIRED STRENGTH PRESSURE TEST SPECIFIED ON THESE OR PROJECT SPECIFIC CONSTRUCTION PLANS.

PIPE EMBEDMENT:

PVC PIPE SHALL BE INSTALLED WITH MINIMUM 6" PEA GRAVEL BOTTOM BEDDING PROVIDING UNIFORM LONGITUDINAL SUPPORT UNDER THE PIPE. PEA GRAVEL SHALL BE WORKED UNDER THE SIDES OF THE PIPE TO PROVIDE SATISFACTORY HAUNCHING. PEA GRAVEL SHALL BE PLACED TO A MINIMUM DEPTH OF 6" OVER THE TOP OF THE PIPE. PROPER COMPACTION PROCEDURES SHALL BE EXERCISED TO PROVIDE SOIL DENSITIES AS SPECIFIED BY THE DESIGN ENGINEER. IN ROCKY GROUND OR WHEN SPECIFIED ON THE PLANS OR WHEN ORDERED BY THE INSPECTOR, THE PIPE SHALL BE EMBEDDED IN AT LEAST 6" OR MORE OF PEA GRAVEL PLACED AROUND AND OVER THE PIPE BEFORE USING TRENCH TAILINGS FOR FINAL BACK FILL TO GRADE.

FINAL BACKFILL:

AFTER PLACEMENT AND COMPACTION OF PIPE EMBEDMENT MATERIALS, THE BALANCE OF BACKFILL MATERIALS MAY BE MACHINE PLACED. THE MATERIAL SHALL CONTAIN NO LARGE STONES OR ROCKS, FROZEN MATERIAL, OR DEBRIS. PROPER COMPACTION PROCEDURES SHALL BE EXERCISED TO PROVIDE REQUIRED DENSITIES WITHIN THE BACKFILL AREA.



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