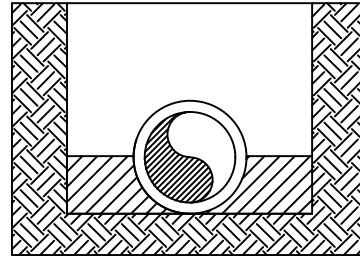


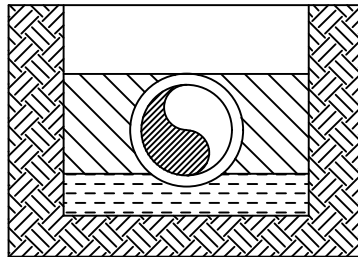
**TYPE 1**

FLAT-BOTTOM\* TRENCH, LOOSE EMBEDMENT  
 $E = 50 \text{ psi (340 kPa)}$ .  $K = 0.110$



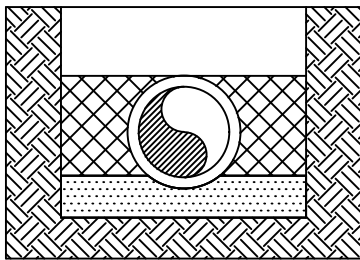
**TYPE 2**

FLAT-BOTTOM\* TRENCH, EMBEDMENT LIGHTLY  
 CONSOLIDATED TO CENTERLINE OF PIPE.  
 $E = 200 \text{ psi (1,380 kPa)}$ .  $K = 0.110$



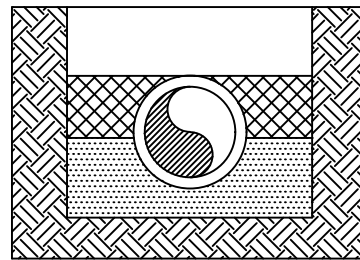
**TYPE 3**

PIPE BEDDED ON 4" (100 mm) MINIMUM  
 OF LOOSE SOIL.\*\* EMBEDMENT LIGHTLY  
 CONSOLIDATED TO TOP OF PIPE.  
 $E = 400 \text{ psi (2,760 kPa)}$ .  $K = 0.102$



**TYPE 4**

PIPE BEDDED ON SAND, GRAVEL OR CRUSHED  
 STONE TO DEPTH OF 1/8 PIPE DIAMETER, 4"  
 (100 mm) MINIMUM. EMBEDMENT COMPACTED  
 TO TOP OF PIPE.(APPROXIMATELY 80% STANDARD  
 PROCTOR. AASHTO T-99 OR ASTM D 698)  
 $E = 1,000 \text{ psi (6,900 kPa)}$ .  $K = 0.096$



**TYPE 5**

PIPE ENBEDDED IN COMPACTED GRANULAR  
 MATERIAL TO CENTERLINE OF PIPE. COMPACTED  
 GRANULAR OR SELECT MATERIAL TO TOP OF PIPE.  
 (APPROXIMATELY 90% STANDARD PROCTOR.  
 AASHTO T-99 OR ASTM D 698)  
 $E = 2,000 \text{ psi (13,800 kPa)}$ .  $K = 0.083$

NOTE: REQUIRED EMBEDMENT TYPE WILL DEPEND ON THE PIPE'S DIMENSION RATIO, INTERNAL OPERATING PRESSURE, AND EXTERNAL LOAD, AND SHALL BE SPECIFIED BY THE PURCHASER.(SEE SEC. 5.3)

\* "FLAT-BOTTOM" IS DEFINED AS UNDISTURBED EARTH.

\*\* "LOOSE SOIL" OR "SELECT MATERIAL" IS DEFINED AS NATIVE SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCKS FOREIGN MATERIAL, AND FROZEN EARTH. A SOFT "LOOSE SOIL" BEDDING WILL CONTOUR TO THE PIPE BOTTOM. CAUTION MUST BE EXERCISED TO ENSURE PROPER PLACEMENT OF EMBEDMENT MATERIAL UNDER THE HAUNCHES OF THE PIPE.

From AWWA C.605  
 UNDERGROUND INSTALLATION OF PVC PIPE



SCALE: N.T.S.  
 DATE: 9/01/2016

**PIPE ENVELOPE  
 REQUIREMENTS**

DETAIL

**D-60**