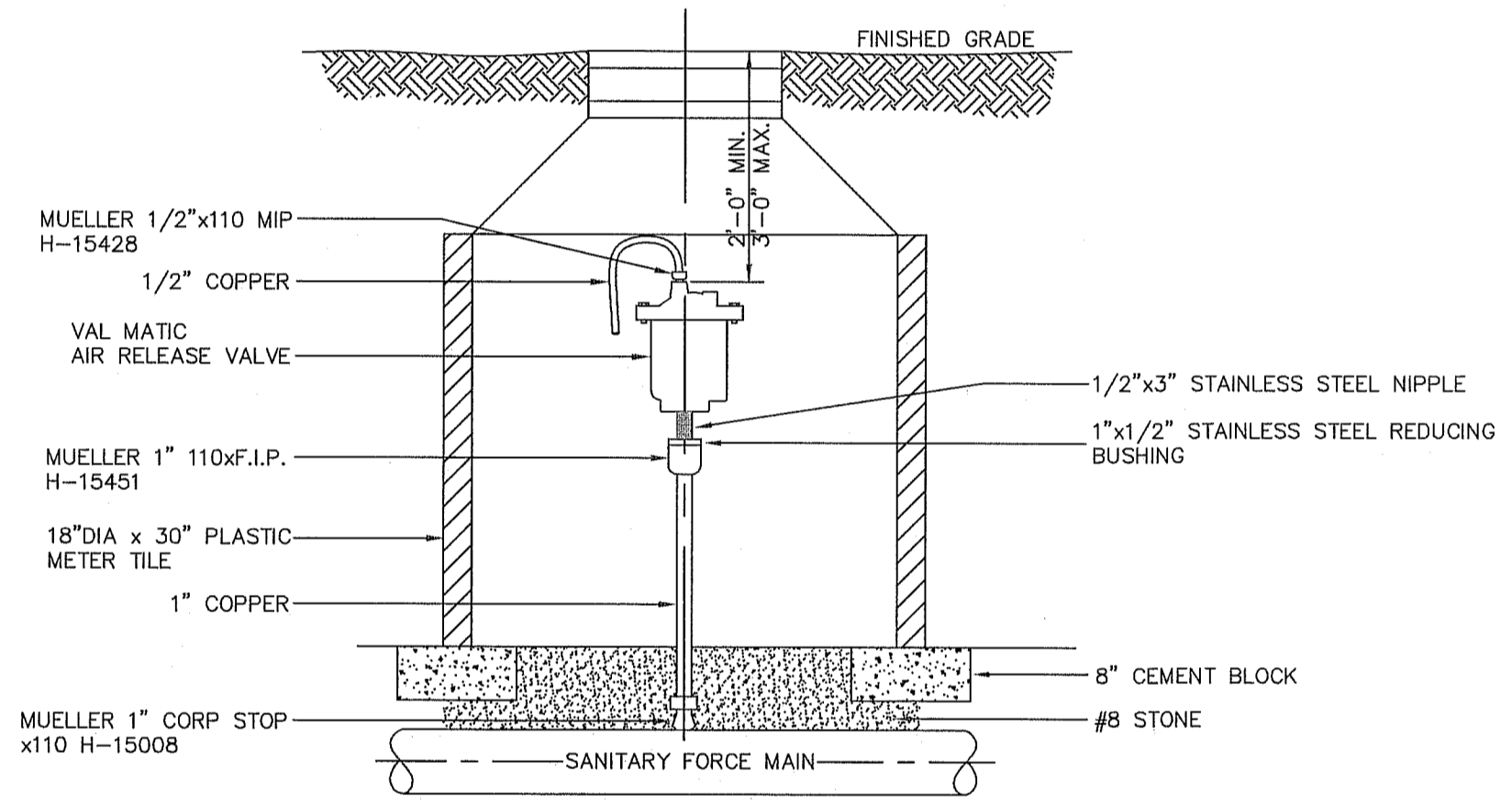


TRENCH WITHIN PAVEMENT N.T.S.  
TRENCH OUTSIDE OF PAVEMENT N.T.S.

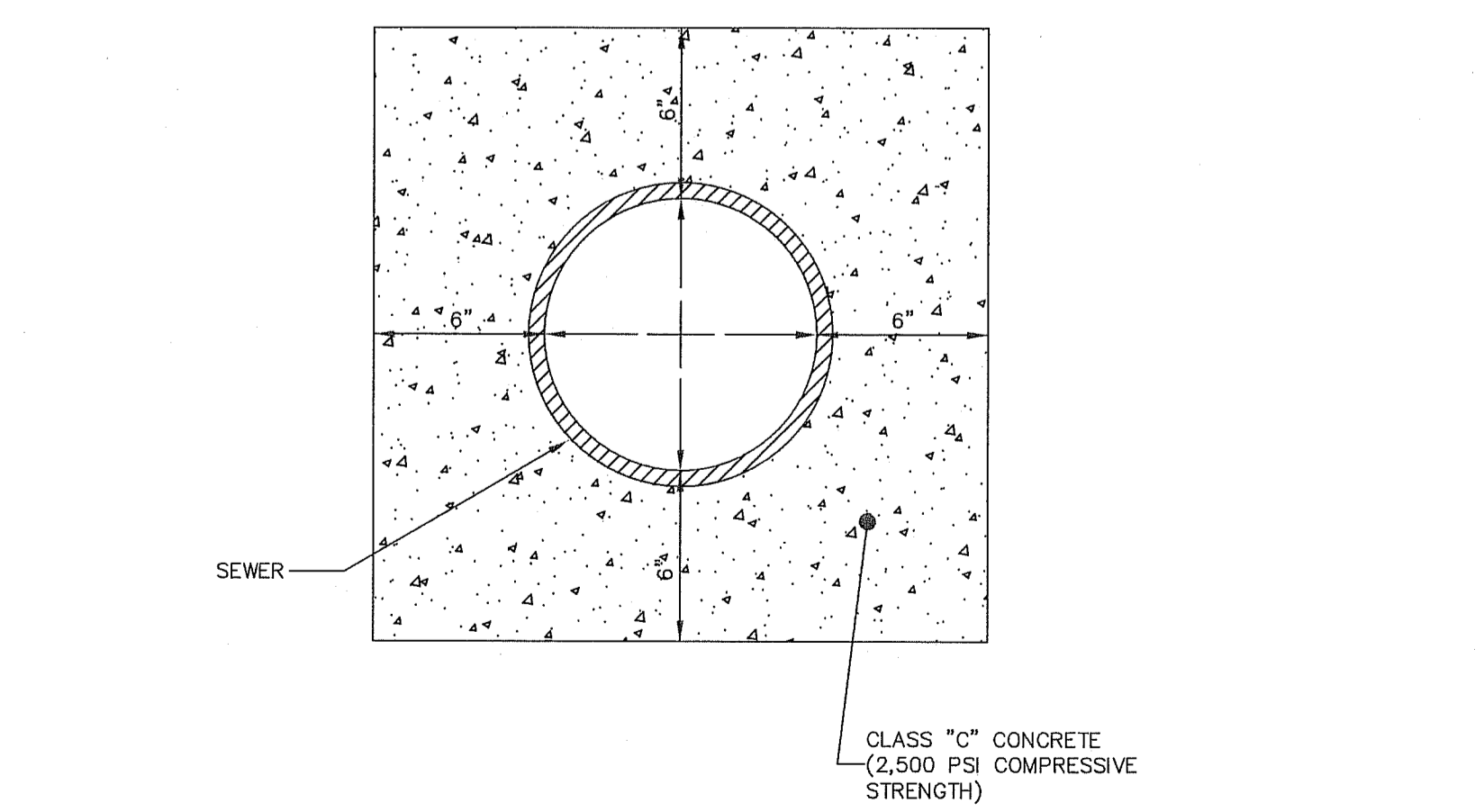
NOTES:  
1. THE WIDTH OF THE TRENCH SHALL BE AT LEAST 12 INCHES AND NOT EXCEED 24 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE PIPE. THE SANITARY LINE SHALL BE LOCATED IN CENTER OF TRENCH TO ALLOW FOR A MINIMUM OF 6 INCH CLEARANCE FROM TRENCH WALLS.  
2. BACKFILL: AS A MINIMUM USE COMPACTED ODOT #304 OR #411 Limestone TO 95% STANDARD PROCTOR, OR AS REQUIRED BY THE POLITICAL SUBDIVISION MAINTAINING THE PAVEMENT IF MORE STRINGENT.

NOTE: ODOT, COUNTY ENGINEER OR TOWNSHIP MAY REQUIRE SPECIAL BACKFILL NEAR AND/OR UNDER PAVEMENT.

ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
TYPICAL TRENCH SECTION FOR SANITARY LINE INSTALLATION  
SCALE: N.T.S. STANDARD DRAWING NO. 2



ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
AIR RELEASE VALVE  
SCALE: N.T.S. STANDARD DRAWING NO. 3



ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
CONCRETE PIPE ENCASEMENT  
SCALE: N.T.S. STANDARD DRAWING NO. 4

NEENAH R-1782, EAST JORDAN MODEL 1710 (8 1/2" HIGH), EAST JORDAN V-1317 (5' HIGH), OR APPROVED EQUAL CASTINGS WITH SOLID COVER W/ SANITARY SEWER INSCRIBED ON LID.  
(FIELD COAT W/ ONE COAT ASPHALTIC PAINT)

PRECAST MANHOLES SHALL CONFORM TO ASTM C-478

INSTALL EXTERNAL CHIMNEY SEAL WRAPID SEAL BY CANUSA-CPS THE WOODLANDS, TEXAS

MAX. 12" W/3 CONCRETE ADJUSTING RINGS

EXTEND 4" ABOVE AND BELOW CHIMNEY AREA

RUBBER GRADE ADJUST IN PAVEMENT AREAS

ECCENTRIC CONE

STEPS SHALL BE STEEL COVERED WITH POLYPROPYLENE AND SHALL CONFORM TO ASTM C-478.  
(SEE STANDARD MH.DWG FOR LOCATION)

INSTALL A 12" WIDE EXTERNAL JOINT SEAM WRAP, USING CONSEAL CS-212 WITH CS-75 PRIMER MANUFACTURED BY CONCRETE SEALANTS INC. NEW CARLISLE, OHIO

JOINTS SHALL CONFORM TO ASTM C-433 AND INCLUDE CONSEAL 102 BUTYL RESIN OR CONSEAL CS 1500.

FLEXIBLE WATERTIGHT JOINT W/S.S BAND

$$W = 1.5 \times \text{DIA OF PIPE}$$

NOTE: PRECAST SANITARY MANHOLE CONCRETE MIX SHALL INCLUDE XYPEX CONCENTRATE ADMIX C-2000.

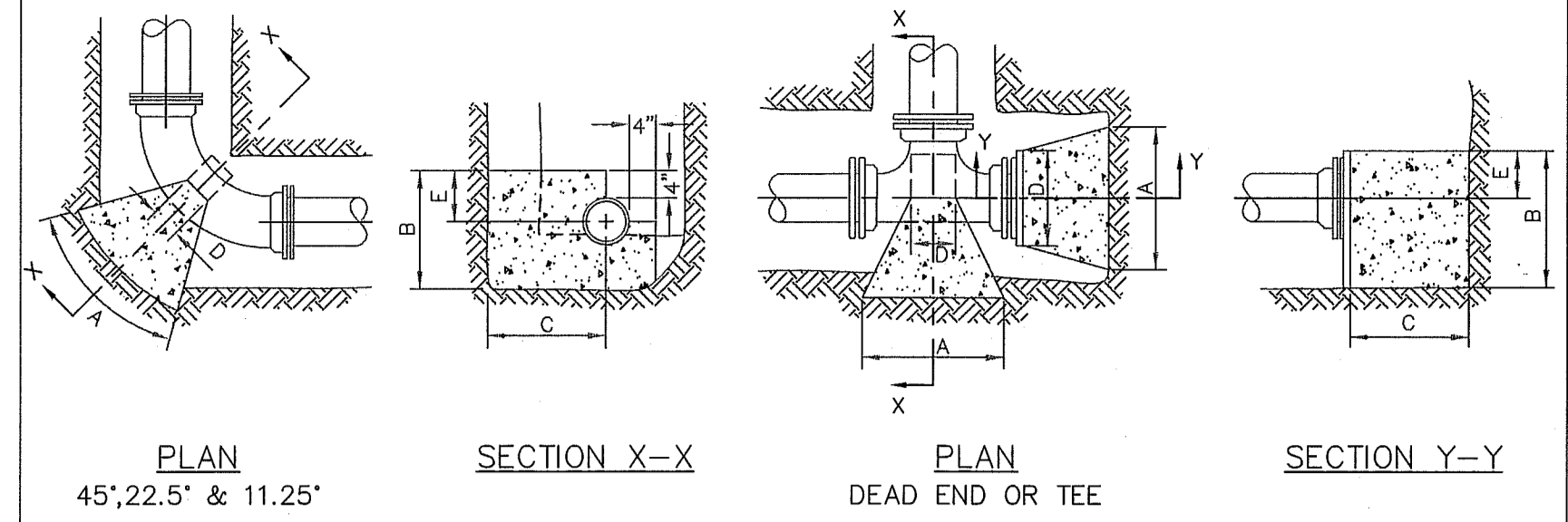
INTEGRAL BASE

6" COMPACTED GRANULAR MAT

HANDLING HOLES MAY BE CAST IN SECTIONS AND WILL BE FILLED WITH EMBECO GROUT AFTER SECTIONS ARE IN PLACE. CONCRETE FOR MANHOLE BASE TOGETHER WITH FILL CONCRETE SHALL BE ODOT CLASS C.

## STANDARD SANITARY MANHOLE

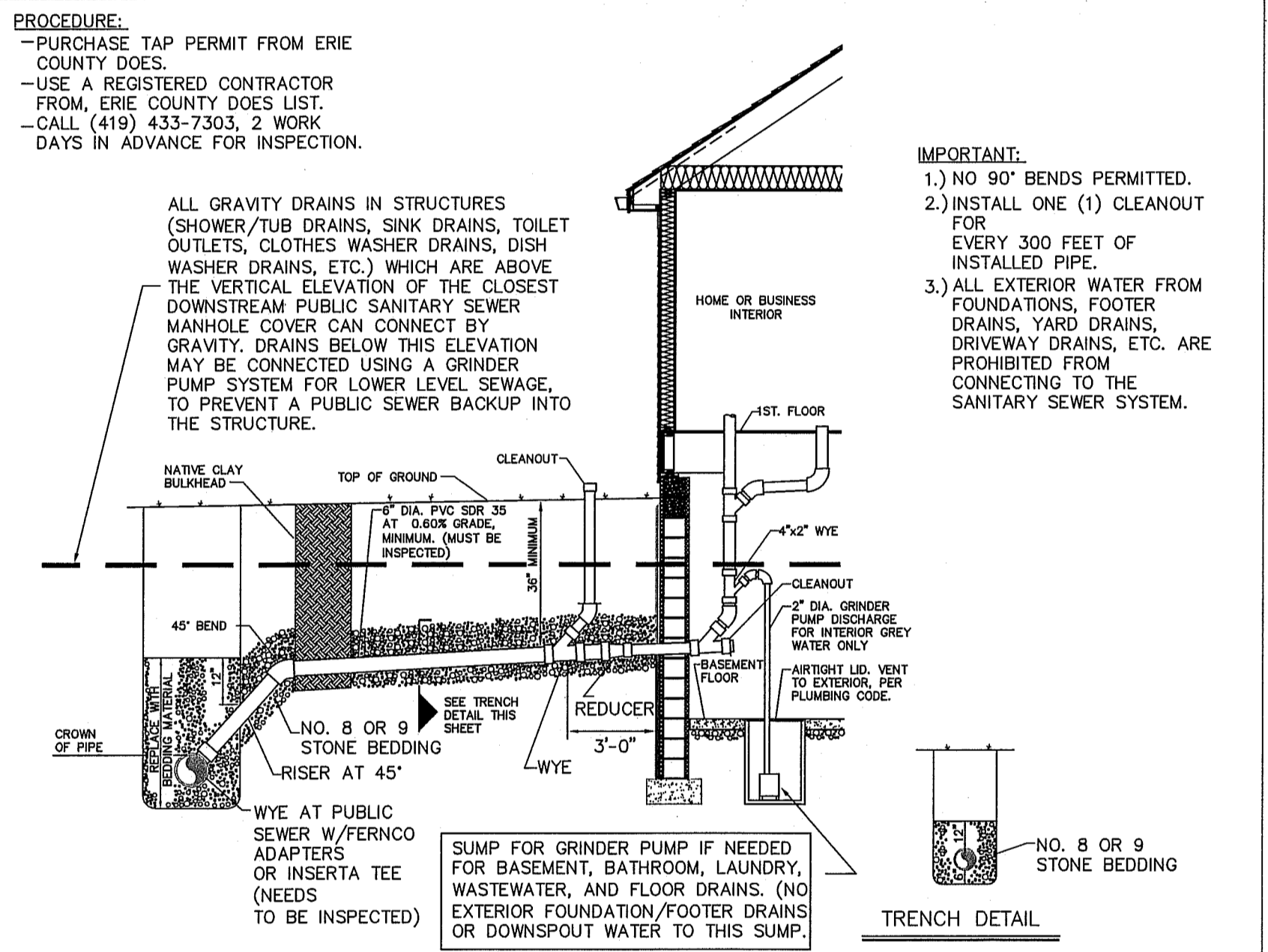
ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
STANDARD SANITARY MANHOLE  
SCALE: N.T.S. STANDARD DRAWING NO. 1



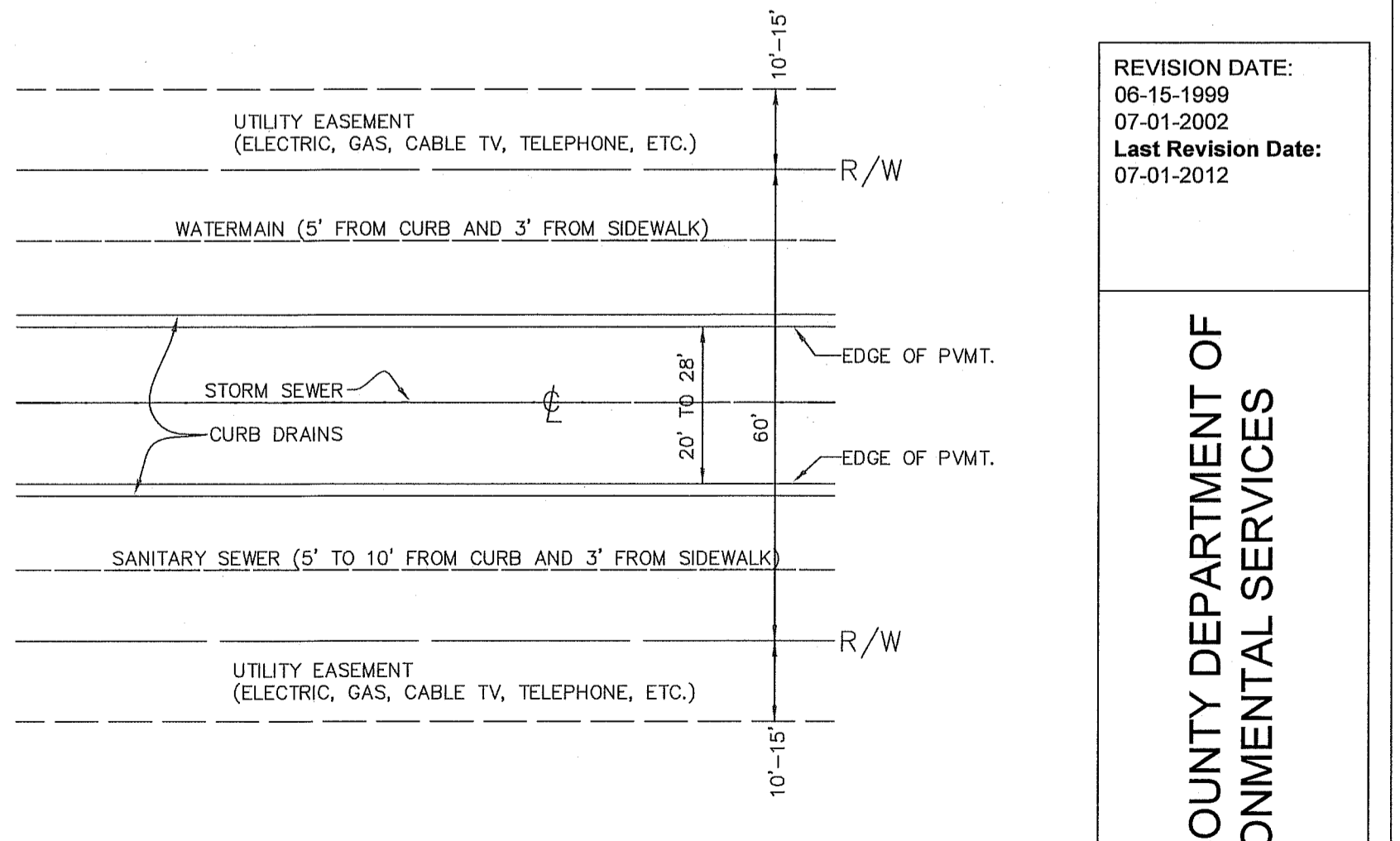
11.25° BEND				22.5° BEND				45° BEND				TEE-DEAD END			
DIA	A	B	C.Y.	A	B	C.Y.	A	B	C.Y.	A	B	C.Y.	A	B	C.Y.
4"	-	-	-	-	-	-	1'-0"	1'-0"	0.08	1'-1"	1'-0"	0.08	1'-1"	1'-0"	0.08
6"	-	-	-	1'-0"	1'-0"	0.08	1'-7"	1'-2"	0.12	1'-10"	1'-4"	0.15	2'-6"	1'-8"	0.23
8"	1'-0"	1'-0"	0.07	1'-5"	1'-2"	0.11	2'-5"	1'-4"	0.17	2'-6"	1'-8"	0.23	3'-4"	2'-0"	0.32
10"	1'-2"	1'-2"	0.09	2'-0"	1'-4"	0.15	3'-0"	1'-8"	0.25	3'-4"	2'-0"	0.32	4'-1"	2'-4"	0.42
12"	1'-5"	1'-4"	0.23	2'-6"	1'-6"	0.35	3'-8"	2'-0"	0.65	4'-1"	2'-4"	0.82	5'-7"	3'-0"	1.30
14"	1'-8"	1'-6"	0.28	3'-0"	1'-8"	0.45	4'-3"	2'-4"	0.84	4'-10"	2'-8"	1.05	6'-7"	3'-0"	1.30
16"	2'-0"	1'-8"	0.33	3'-4"	2'-0"	0.58	4'-10"	2'-8"	1.06	5'-7"	3'-0"	1.30	7'-7"	3'-0"	1.30
18"	2'-4"	1'-10"	0.53	3'-7"	2'-4"	0.95	5'-6"	3'-0"	1.73	6'-1"	3'-6"	2.18	9'-7"	3'-0"	2.18
20"	2'-7"	2'-0"	0.61	3'-10"	2'-8"	1.15	6'-1"	3'-4"	2.05	6'-7"	4'-0"	2.62	10'-7"	3'-0"	2.62
24"	3'-5"	2'-2"	0.97	5'-0"	3'-0"	1.91	7'-7"	3'-10"	3.44	8'-6"	4'-6"	4.47	13'-7"	3'-0"	4.47

NOTE:  
1. BLOCKING DESIGN BASED ON WORKING PRESSURE 150 PSI + 100 PSI WATER HAMMER AND SOIL BEARING 3000 PSF.  
2. THRUST BLOCKS SHALL BE CLASS "C" CONCRETE 4,000 PSI COMPRESSIVE STRENGTH.  
3. THRUST BLOCKS SHALL BE 3" MINIMUM CLEARANCE FROM ALL BOLTS

ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
THRUST BLOCKING DETAILS FOR BENDS IN HORIZONTAL PLANE (WORKING PRESSURE UP TO 150 PSI)  
SCALE: N.T.S. STANDARD DRAWING NO. 5



ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
STANDARD SANITARY SERVICE CONNECTION  
SCALE: N.T.S. STANDARD DRAWING NO. 6



NOTES:  
1. UTILITY EASEMENTS ARE FOR SIDEWALKS, NATURAL GAS LINES, BURIED ELECTRICAL LINES, BURIED CABLE LINES, BURIED TELEPHONE LINES, ETC.  
2. TREE PLANTING AND LANDSCAPE MOUNDING IN R/W SHALL BE LIMITED TO SMALLER ORNAMENTAL TREES AND REQUIRE THE APPROVAL OF THE ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES.  
3. SIDEWALKS INSTALLED OVER COUNTY WATER AND SANITARY SEWER LINES ARE PROHIBITED. NO WATER OR SEWER CONNECTIONS WILL BE ALLOWED UNTIL SIDEWALKS ARE RELOCATED

ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES  
RECOMMENDED UTILITY LAYOUT DESIGN  
SCALE: N.T.S. STANDARD DRAWING NO. 7

REVISION DATE:  
06-15-1999  
07-01-2002  
Last Revision Date:  
07-01-2012

ERIE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES