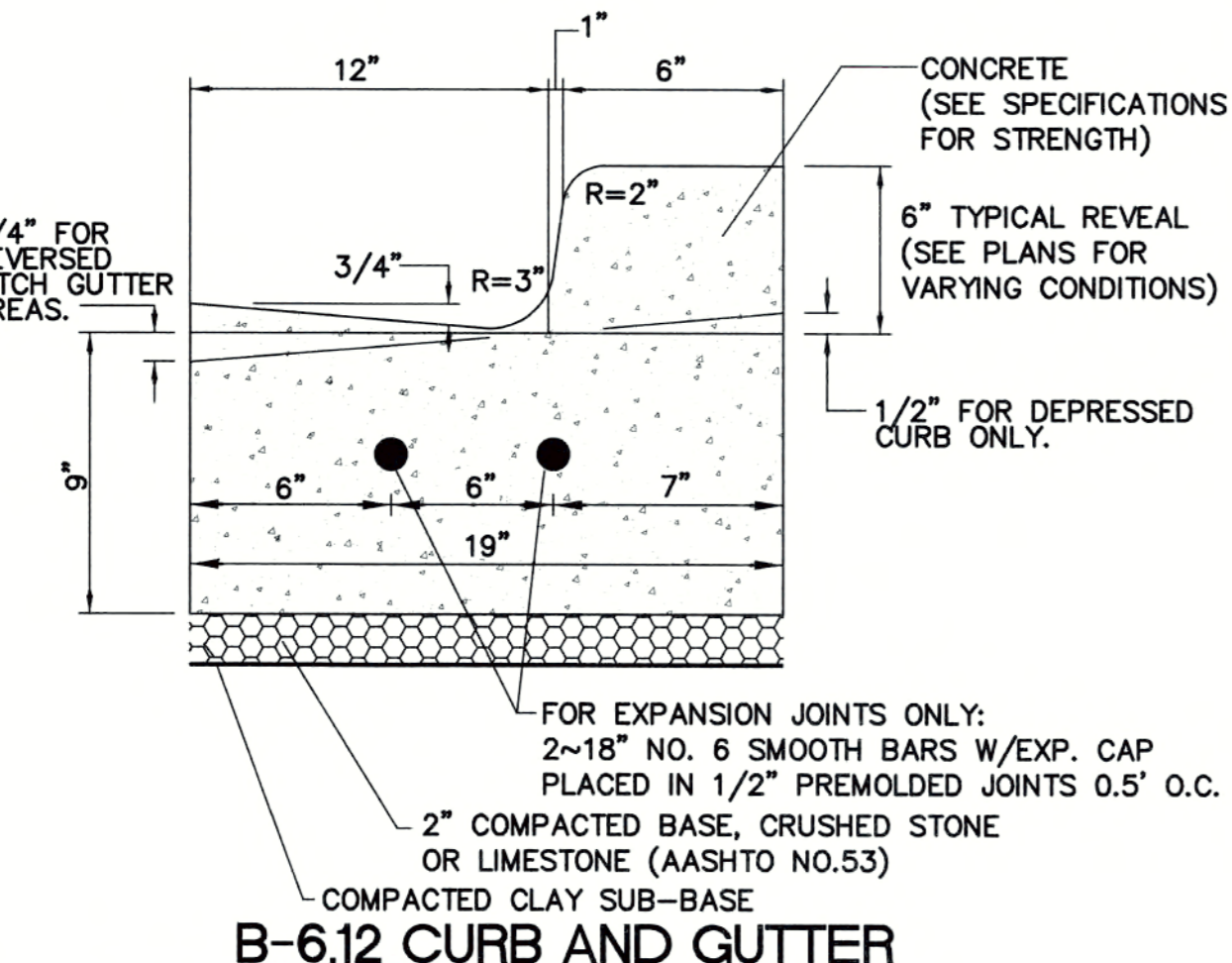
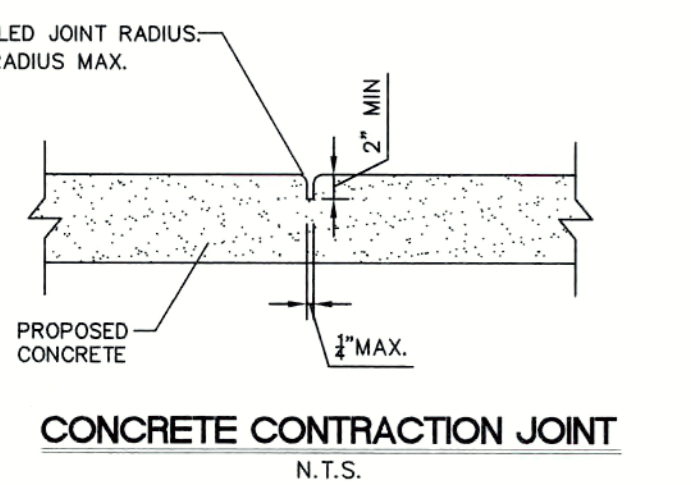
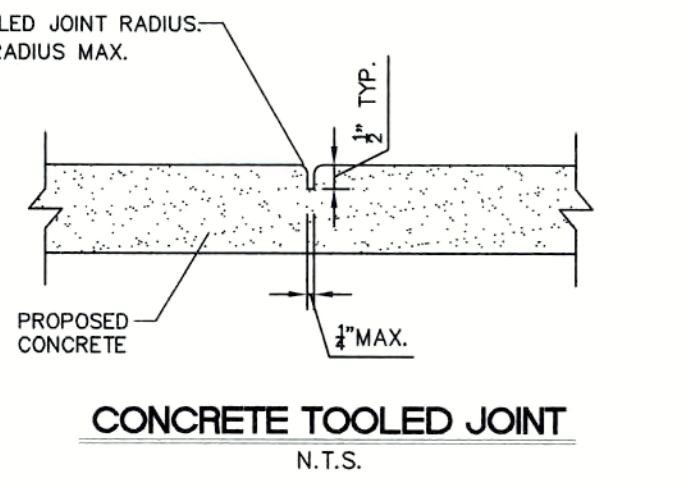
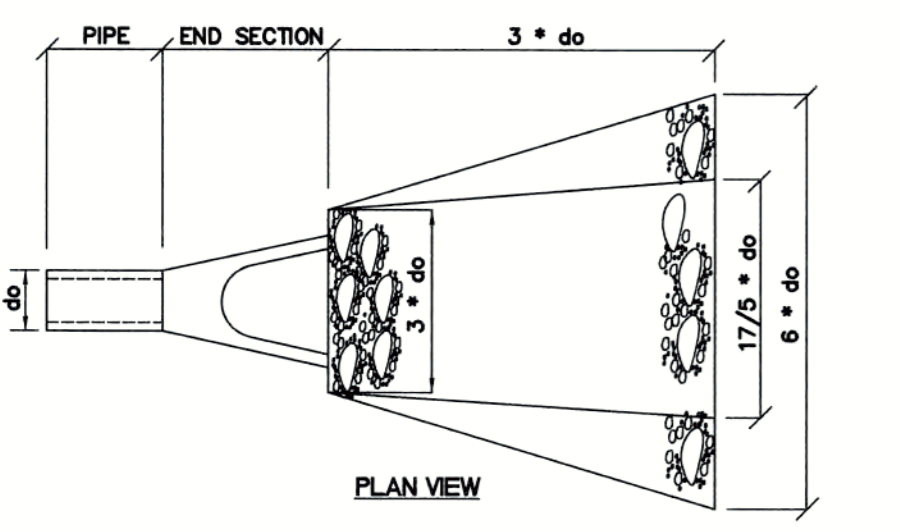
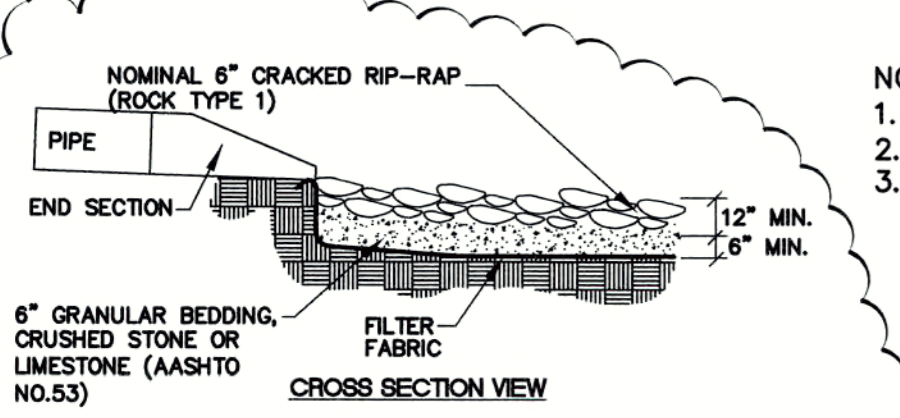


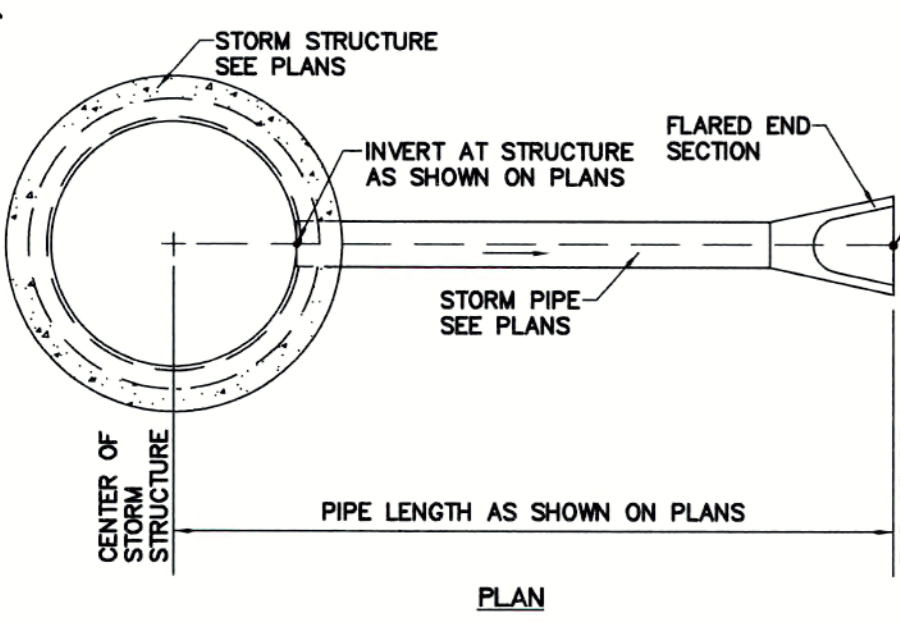
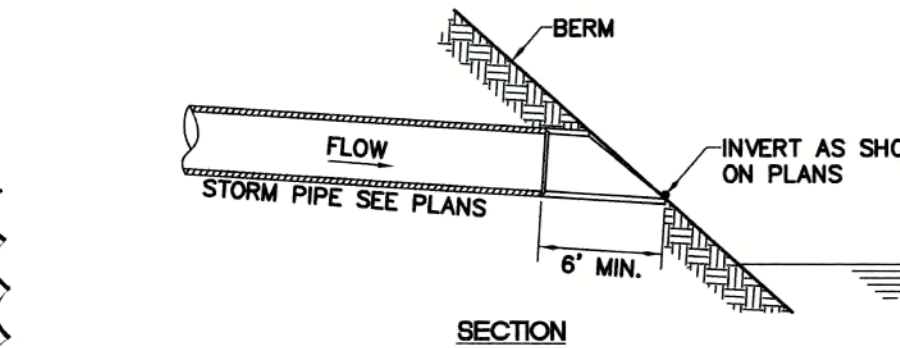
1. PROVIDE TOOLED JOINTS AT 5' O.C.
2. PROVIDE CONTRACTION JOINTS AT 15' O.C.
3. PROVIDE EXPANSION JOINTS AT 45' O.C.
4. ROUND EXPOSED CORNERS WITH 1/2" RADIUS.



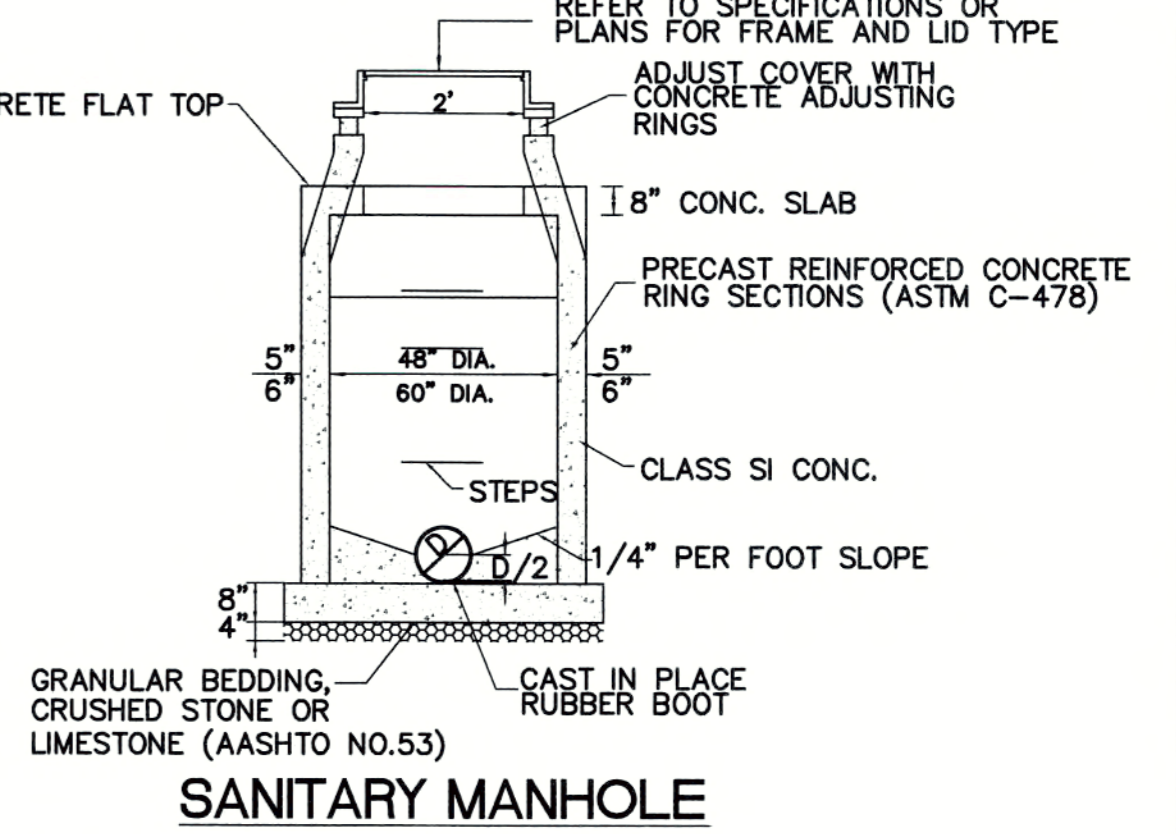
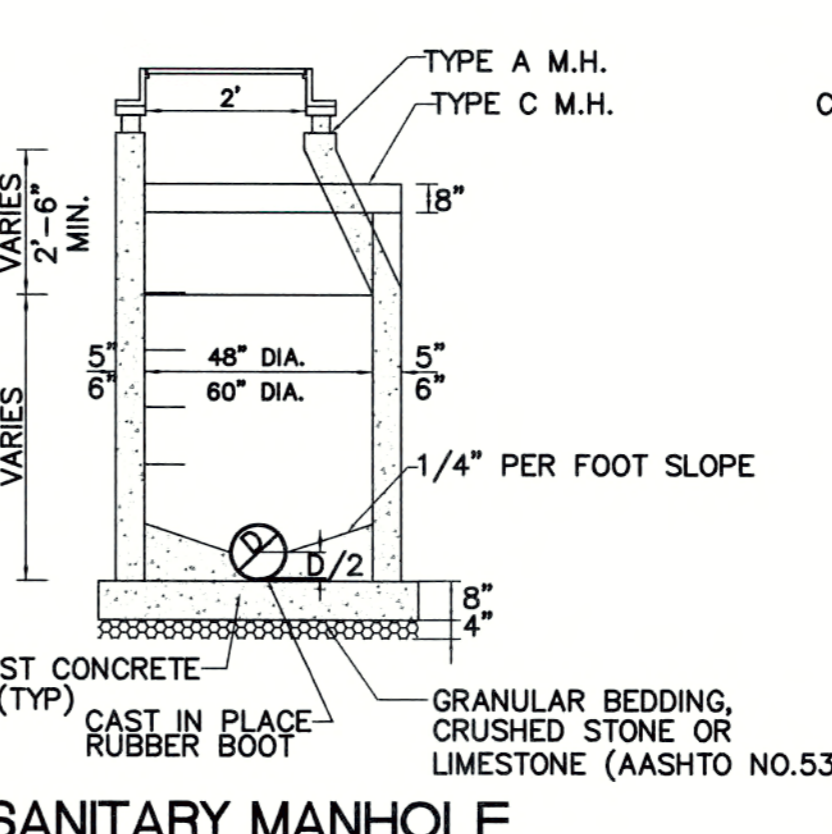
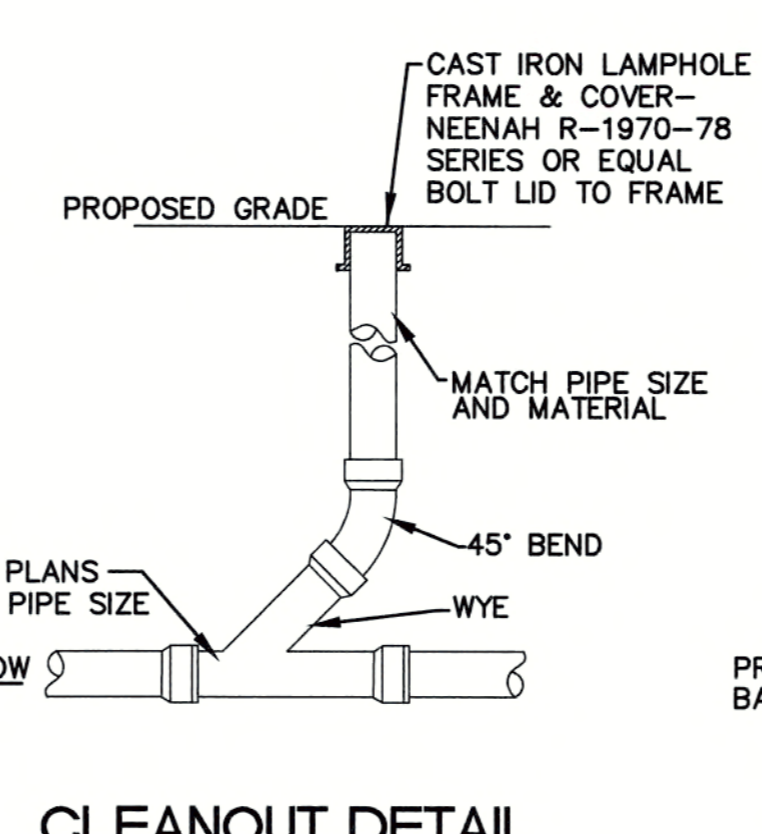
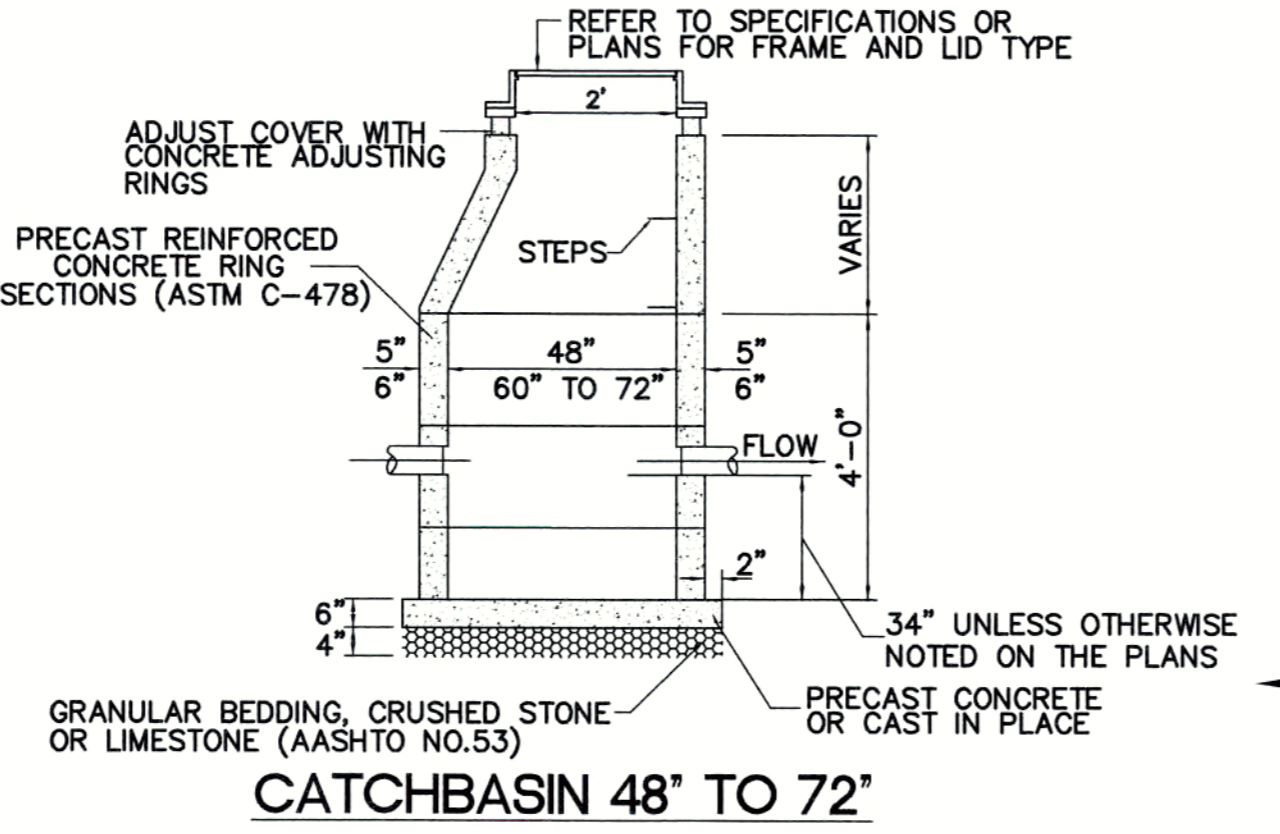
1. PROVIDE 1/2" EXPANSION JOINTS EVERY 45' O.C.
2. PROVIDE HAND TOOLED CONTRACTION JOINTS EVERY 15' O.C.
3. THE MINIMUM LONGITUDINAL CURB SLOPE SHALL BE 0.3%.



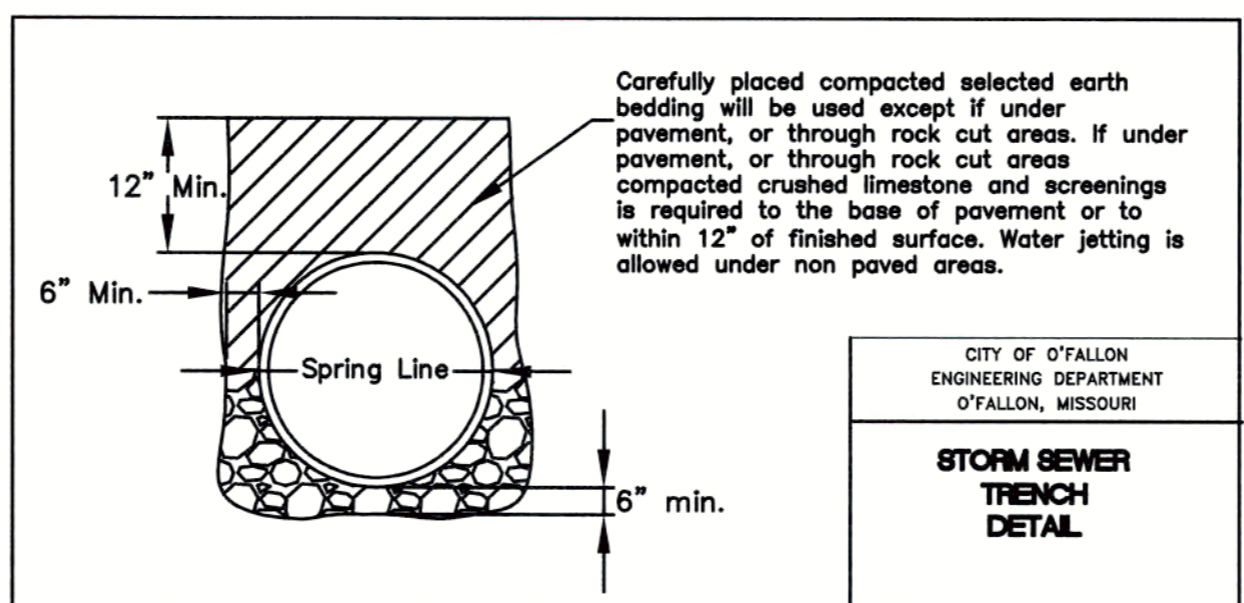
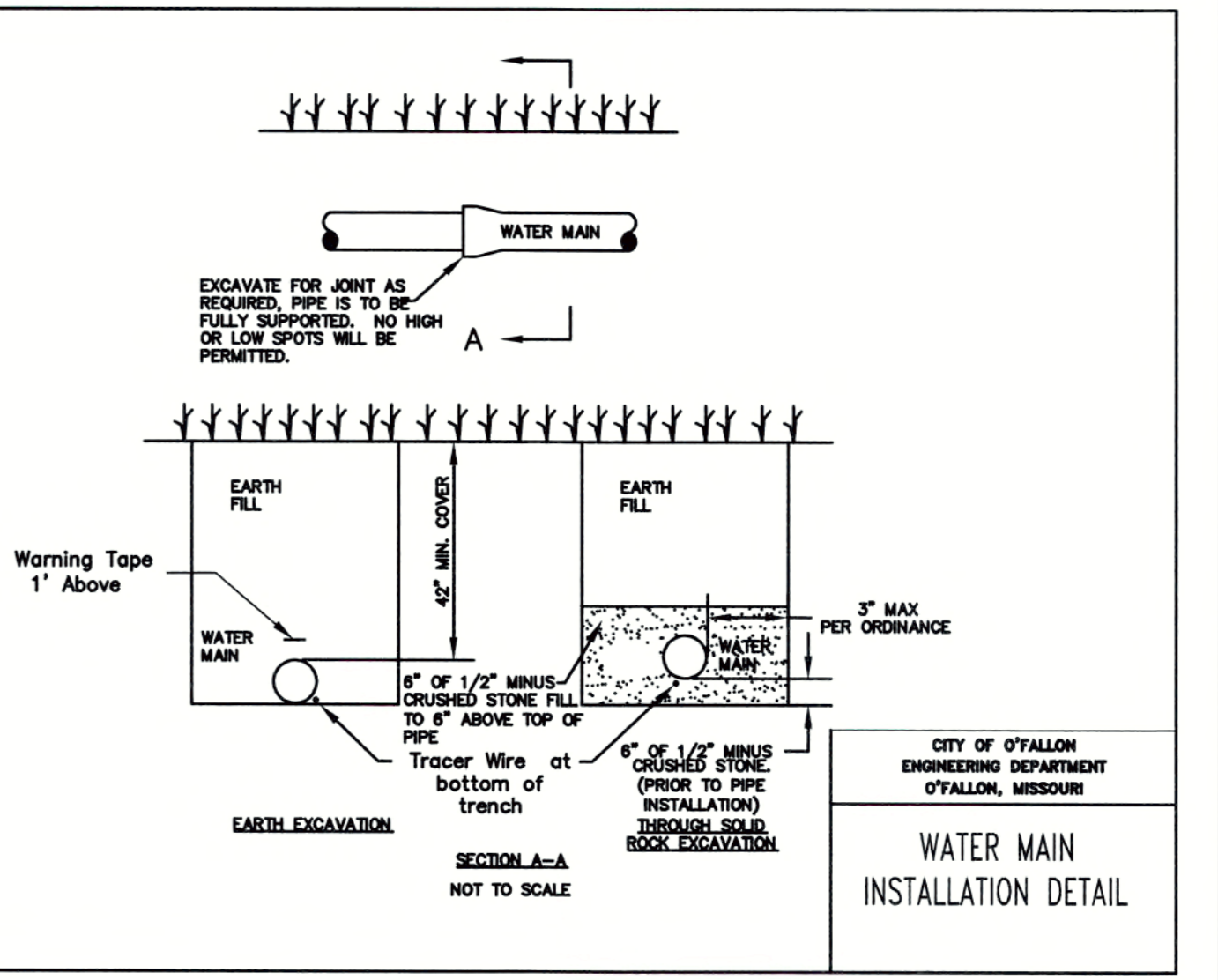
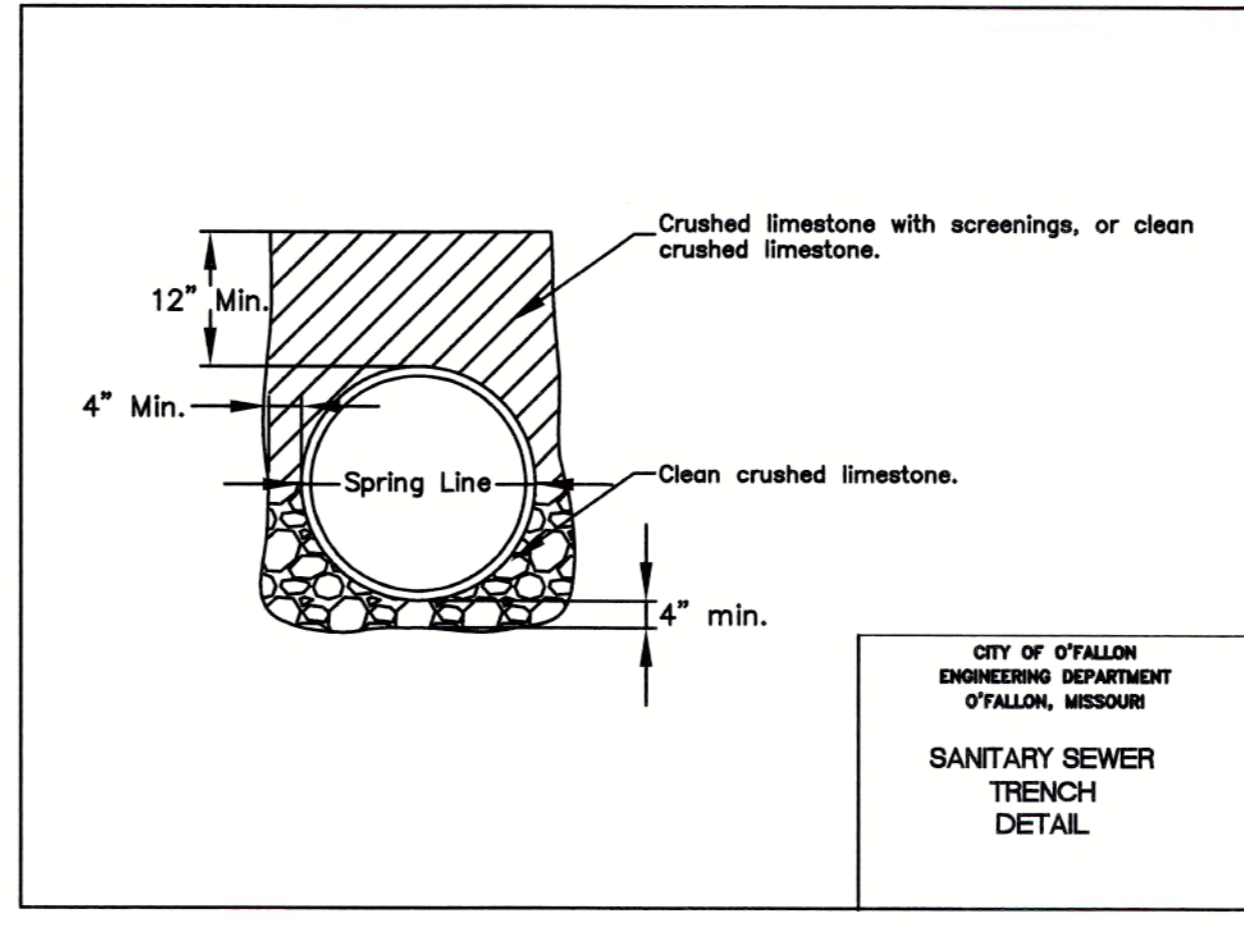
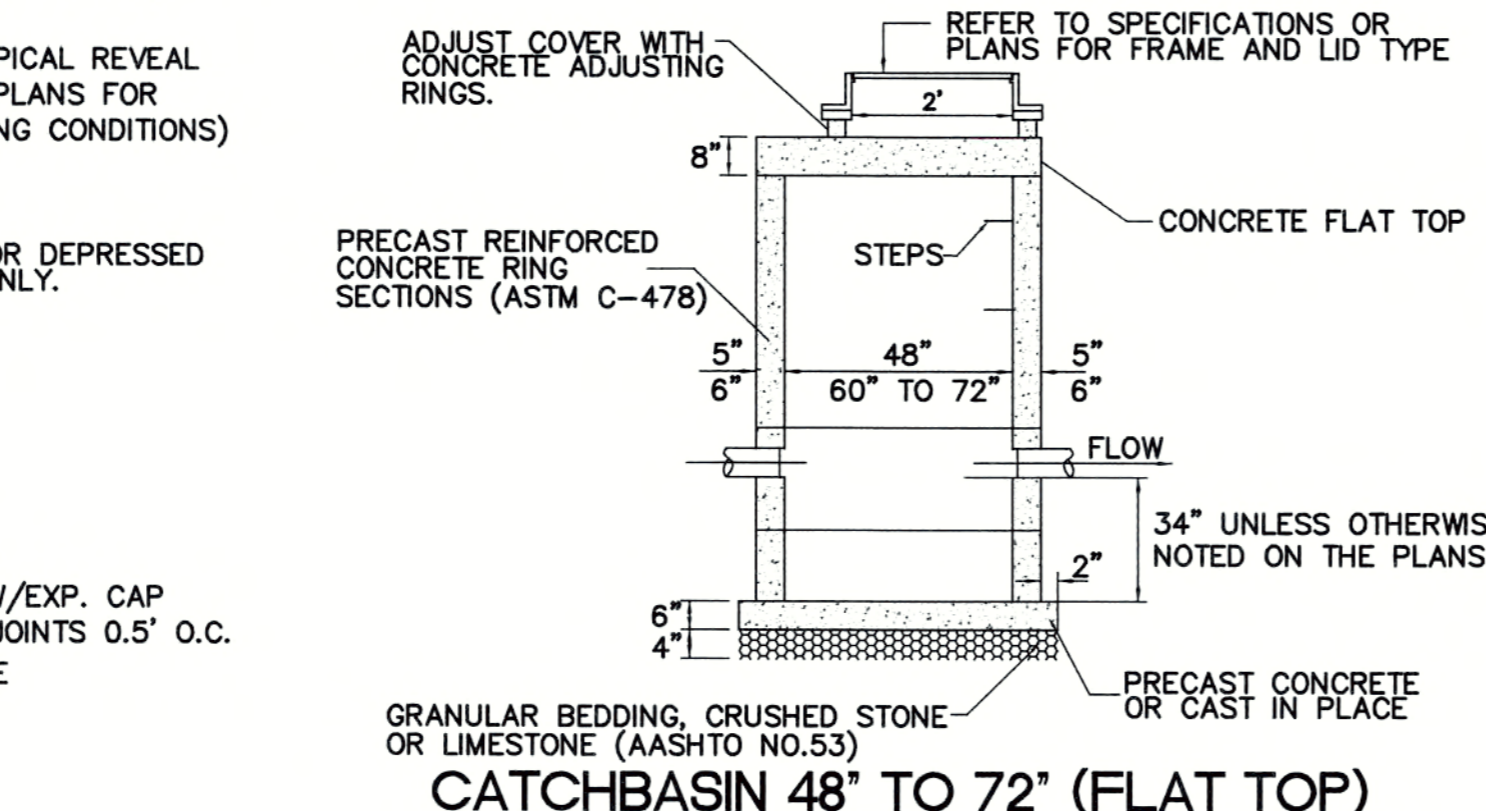
1. THE FILTER FABRIC SHALL MEET THE REQUIREMENTS IN MATERIAL SPECIFICATIONS 592 "GEO-TEXTILE" TABLE 1 OR 2, CLASS I, II OR III OF THE NRCS-IL-URB MANUAL CURRENT EDITION.
2. THE RIP-RAP SHALL BE PLACED ACCORDING TO CONSTRUCTION SPECIFICATION 61 "LOOSE ROCK RIPRAP" OF THE NRCS-IL-URB MANUAL CURRENT EDITION. THE ROCK MAY BE EQUIPMENT PLACED.
3. do = THE OUTSIDE DIAMETER OF THE STORM SEWER.



STORM PIPE WITH F.E.S. LAYOUT



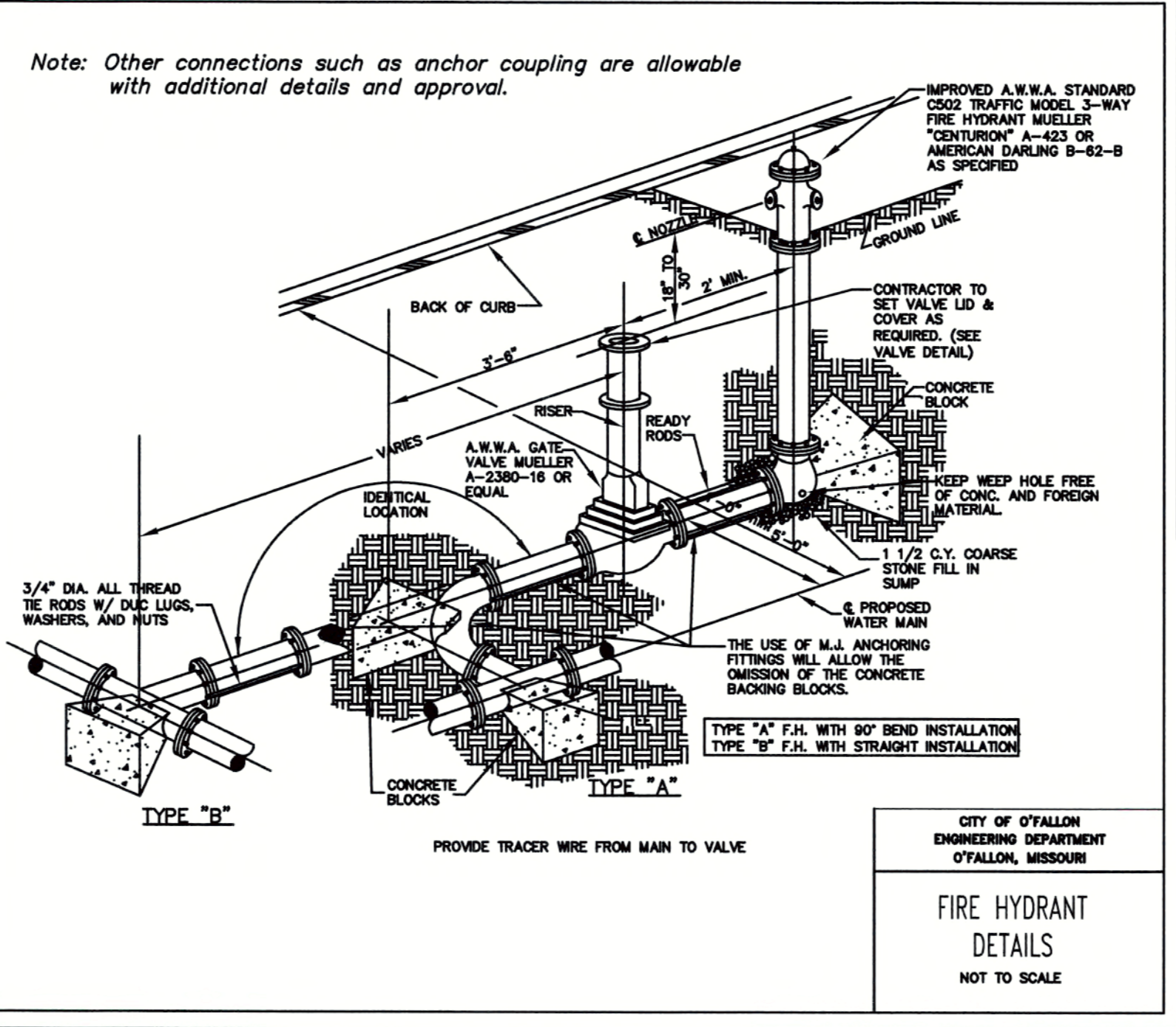
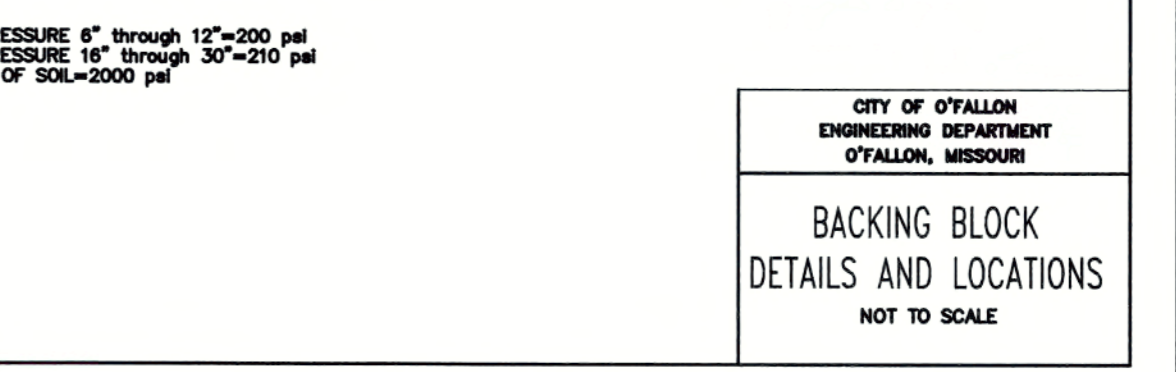
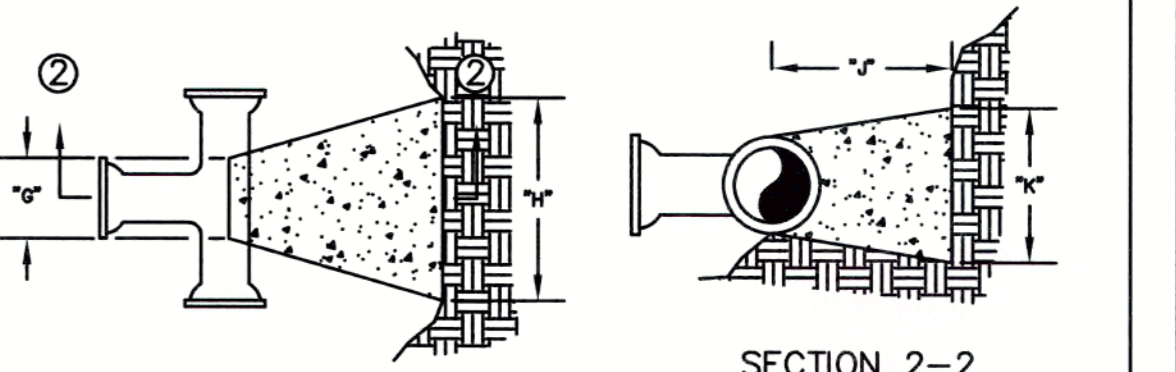
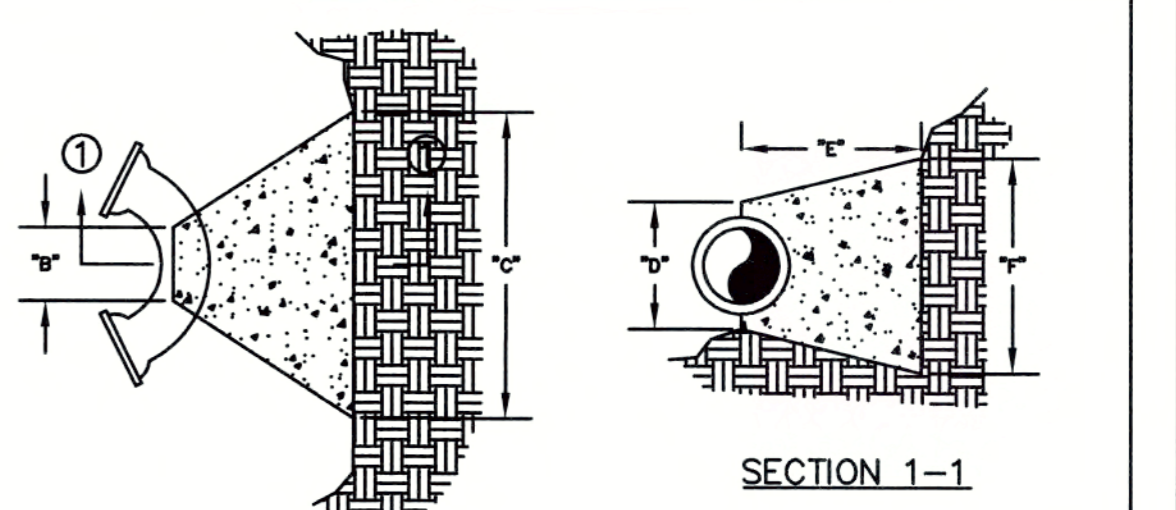
1. PROVIDE EXTERNAL CHIMNEY SEAL ON ALL SANITARY MANHOLES.
2. USE TYPE A UNLESS SPECIFIED IN SEWER CALLOUT.
3. OUTSIDE OF SANITARY MANHOLE SHALL BE MOISTURE PROOFED WITH TWO COATS OF BITUMINOUS MATERIAL.



BENDS	1/2"	3/4"	1"	1 1/4"
6"-11 1/4"	8" 18'	12" 24'	15" 24'	15"
6"-22 1/2"	8" 18'	12" 24'	15" 24'	15"
6"-45"	8" 30'	12" 24'	15" 24'	15"
6"-90"	8" 30'	12" 24'	15" 24'	15"
8"-11 1/4"	8" 20'	12" 24'	15" 24'	10"
8"-22 1/2"	8" 22'	12" 24'	15" 24'	18"
8"-45"	8" 31'	12" 24'	15" 24'	24"
8"-90"	8" 38'	12" 24'	15" 24'	30"
12"-11 1/4"	8" 30'	12" 24'	15" 24'	15"
12"-22 1/2"	8" 33'	12" 24'	15" 24'	25"
12"-45"	8" 40'	12" 24'	15" 24'	27"
12"-90"	8" 60'	12" 24'	15" 24'	40"
16"-11 1/4"	TL 28'	20" 24'	28"	28"
16"-22 1/2"	TL 38'	20" 24'	28"	38"
16"-45"	TL 58'	20" 24'	28"	58"
16"-90"	TL 91'	20" 24'	28"	80"
20"-11 1/4"	TL 34'	24" 28"	28"	28"
20"-22 1/2"	TL 48'	24" 28"	28"	38"
20"-45"	TL 74'	24" 28"	28"	65"
20"-90"	TL 136'	24" 28"	28"	120"
24"-11 1/4"	TL 40'	28" 28"	40"	40"
24"-22 1/2"	TL 56'	28" 28"	40"	56"
24"-45"	TL 101'	28" 28"	40"	101"
24"-90"	TL 198'	28" 28"	40"	180"
30"-11 1/4"	TL 49'	34" 30"	40"	40"
30"-22 1/2"	TL 79'	34" 30"	40"	60"
30"-45"	TL 154'	34" 30"	40"	120"
30"-90"	TL 285'	34" 30"	40"	240"

TEES	1/2"	3/4"	1"	1 1/4"
6"x6"x6"	12"	24"	24"	18"
6"x6"x8"	12"	24"	24"	18"
6"x8"x8"	12"	24"	24"	22"
12"x12"x8"	12"	24"	24"	18"
12"x12"x12"	12"	24"	24"	27"
12"x12"x12"	12"	24"	24"	38"
24"x24"x18"	18"	24"	28"	33"

1. 2" & 4" FITTINGS EQUIVALENT TO 6" FITTINGS.
2. TAPPING SLEEVES TO HAVE BACKING BLOCKS SAME SIZE AS REQUIRED FOR TEES.
3. TL = TOTAL LENGTH OF FITTING MINUS CLEARANCE FOR BELLS.



NO RECORD INFORMATION

PROJECT DETAILS #1

DATE	5/23/19	6/10/19	6/13/19	7/19/19	11/22/19
REVISIONS	BID SET	BID SET	PERMIT SET	NO REVISIONS	PER STORM SEWER IN R.O.W.
NO.	1	2	3	4	5

Prepared For:

**DXU ARCHITECTS**  
412 South Wells, 2nd Floor  
Chicago, IL 60607

**OBERWEIS RESTAURANT**  
1816 Highway K  
O'Fallon, St. Charles County, Missouri, 63366

Prepared By:

**Watermark Engineering Resources, Ltd.**  
2631 Ginger Woods Parkway, Suite 100, Aurora, IL 60502  
phone 630-375-1800 fax 630-238-9800 www.watermark-engineering.com

WATERMARK ENGINEERING RESOURCES, LTD.  
MISSOURI STATE CERTIFICATE OF AUTHORITY #201601512

DATE:

JEFFREY C. MILLER  
NUMBER PE-2016015595

EXP:

JEFFREY C. MILLER - ENGINEER  
MO# 2016015595

CHECKED BY: J.MILLER  
DESIGN BY: M.HANSEN  
DRAWN BY: K.P., M.H.  
DATE: MAY 23, 2019  
SCALE: NONE  
PROJECT NO.: 18-085

PROJECT DETAILS #1

C-10