
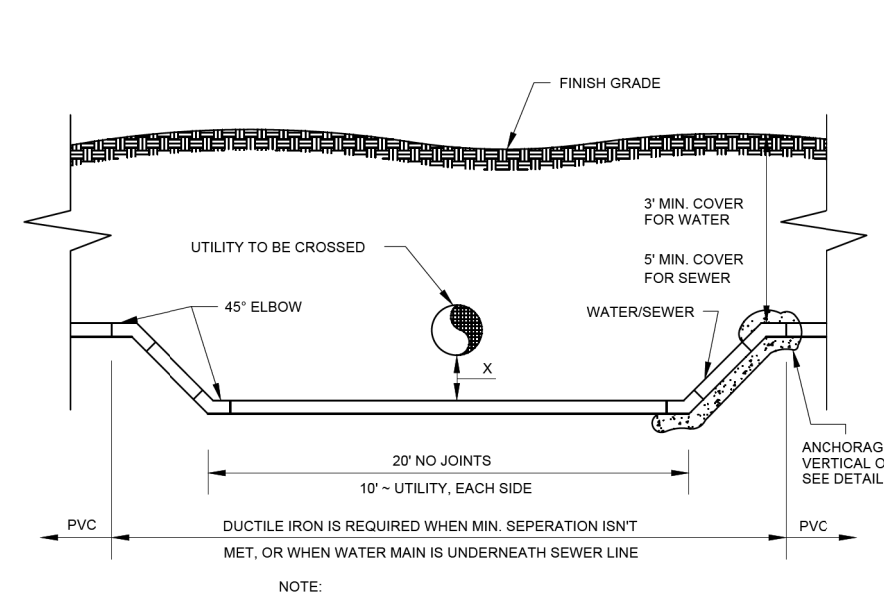


DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO.	SHEET NO.
B-5869	UC-3B
DESIGNED BY: BCH	
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



NOTE:
TO BE USED WHEN COVER NEEDS TO BE INCREASED TO ACHIEVE MIN. SEPARATION.

X. VERTICAL SEPARATION NOTE
 24" MIN. VERTICAL SEPARATION REQUIRED FOR WATER OR SEWER CROSSING STORM WATER.
 18" MIN. VERTICAL SEPARATION REQUIRED FOR WATER CROSSING SEWER.

X. HORIZONTAL SEPARATION NOTE
 5' MIN. HORIZONTAL SEPARATION REQUIRED FOR WATER OR SEWER CROSSING STORM WATER.
 10' MIN. HORIZONTAL SEPARATION REQUIRED FOR WATER CROSSING SEWER.

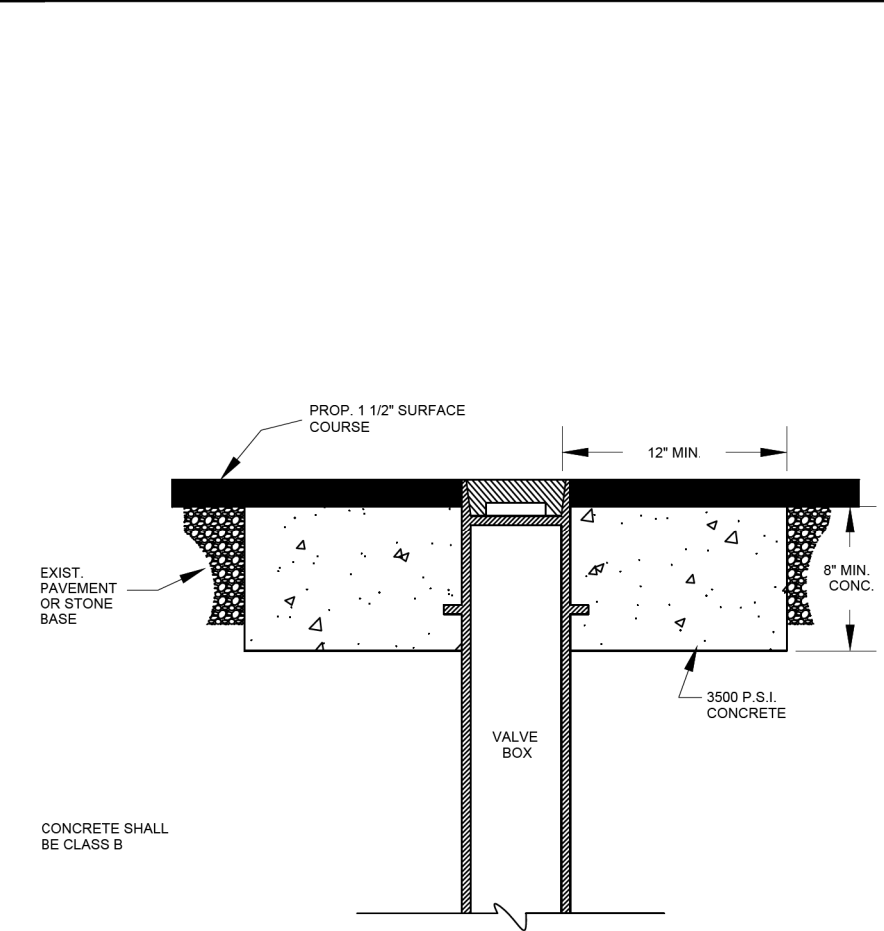
WATER CROSSING NOTES:
 1. CROSSING A WATER MAIN OVER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER, THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION, IN WHICH CASE BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.

2. CROSSING A WATER MAIN UNDER A SEWER: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF THE WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

3. IF LATERAL SEPARATION CANNOT BE MET, BOTH THE WATER MAIN AND THE SEWER / STORM SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF THE WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.

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STD. NO.	DATE	
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SHEET 1 OF 1		

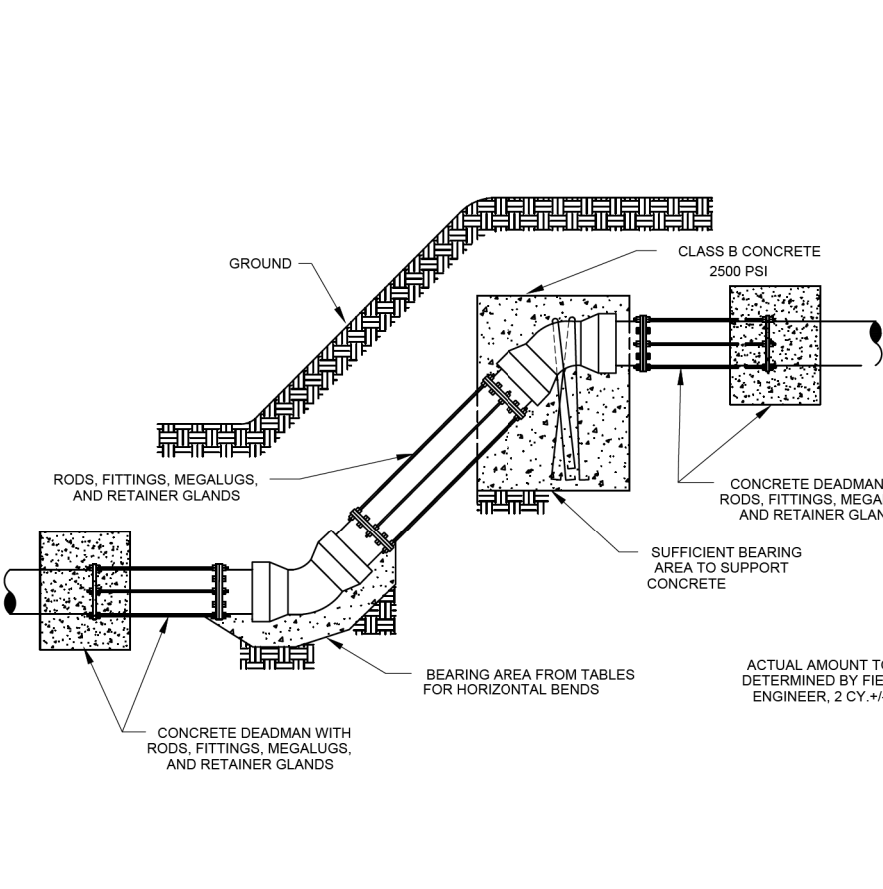
CITY OF MORGANTON



NOTE:
CONCRETE SHALL BE CLASS B

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CITY OF MORGANTON

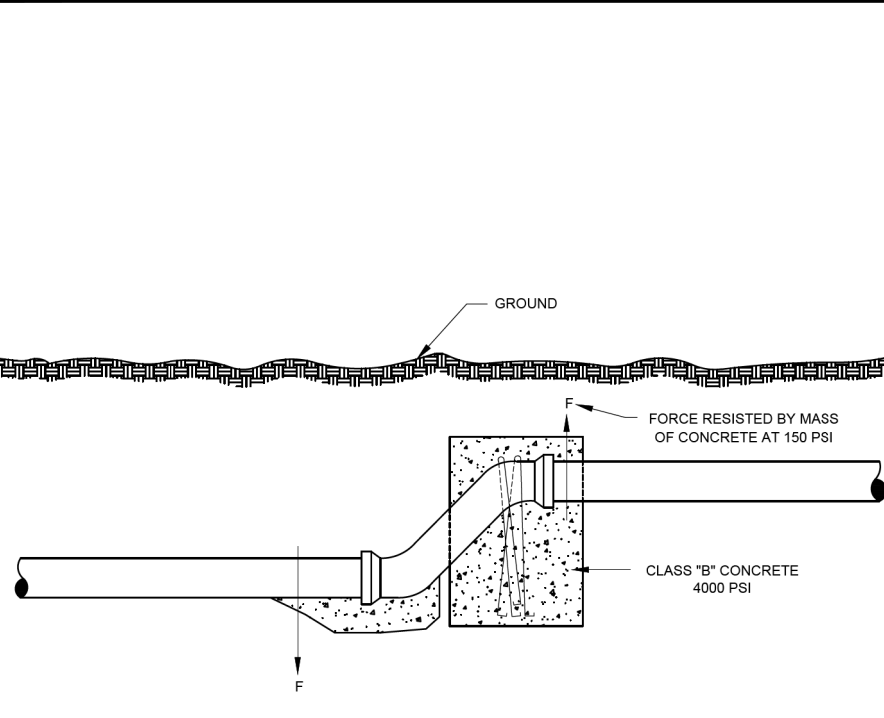


PIPE DIA.	11-1/4" BEND	22-1/2" BEND	45" BEND
6"	812# 1/2 CY.	1653# 1/2 CY.	3247# 1.0 CY.
8"	1444# 1/2 CY.	2939# 3/4 CY.	5773# 1.5 CY.
12"	3248# 1.0 CY.	6612# 1-3/4 CY.	12988# 3.5 CY.
16"	5775# 1-1/2 CY.	11756# 3.0 CY.	23990# 6.0 CY.

NOTE:
ACTUAL AMOUNT TO BE DETERMINED BY FIELD ENGINEER. 2 CY. +/-

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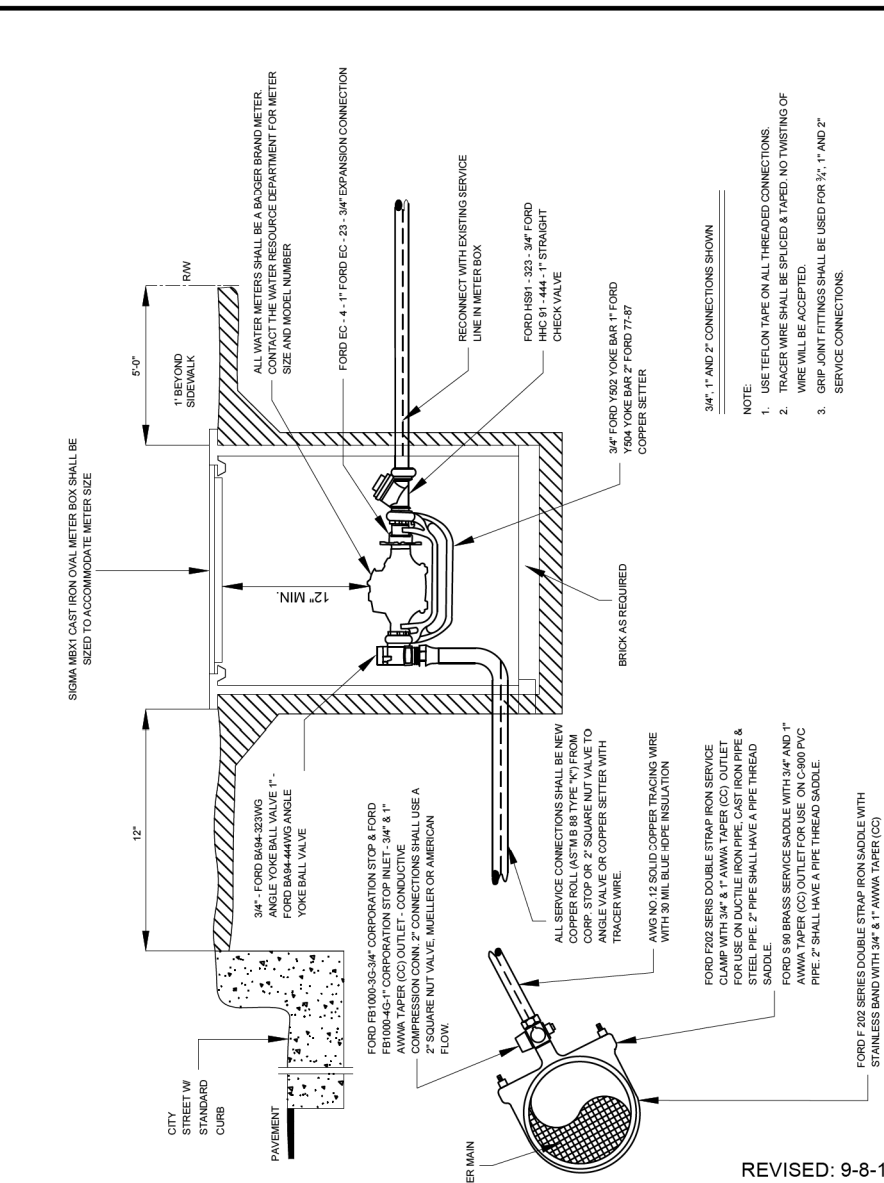


THE FOLLOWING TABLE SHOWS WEIGHT AND VOLUME OF CONCRETE NECESSARY TO HOLD DOWN OFFSET. WEIGHT OF OFFSET, HEIGHT OF PIPE, AND TRENCH LOADS ARE IGNORED IN CALCULATIONS.

DIA.	6" PIPE		12" PIPE		18" PIPE		24" PIPE		30" PIPE	
	FORCE	CONC.	FORCE	CONC.	FORCE	CONC.	FORCE	CONC.	FORCE	CONC.
6"	929#	1/4 CY.	1466#	1/2 CY.	1819#	1/2 CY.	2481#	3/4 CY.	3729#	1 CY.
8"	1589#	1/2 CY.	2506#	3/4 CY.	3179#	3/4 CY.	4239#	1-1/4 CY.	6329#	1 1/2 CY.
10"	2309#	3/4 CY.	3716#	1 CY.	4609#	1-1/4 CY.	6149#	1-1/4 CY.	9029#	2 CY.
12"	2999#	1 CY.	4829#	1-1/4 CY.	6059#	1-1/2 CY.	8149#	1-3/4 CY.	12029#	2 1/2 CY.
16"	4309#	1-1/4 CY.	7259#	1-3/4 CY.	9359#	2-1/2 CY.	12419#	3-1/4 CY.		

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CITY OF MORGANTON



NOTE:
 1. ALL CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE CITY OF MORGANTON WATER MAIN STANDARDS.
 2. ALL CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE CITY OF MORGANTON WATER MAIN STANDARDS.
 3. ALL CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE CITY OF MORGANTON WATER MAIN STANDARDS.

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SHEET 1 OF 1		

CITY OF MORGANTON