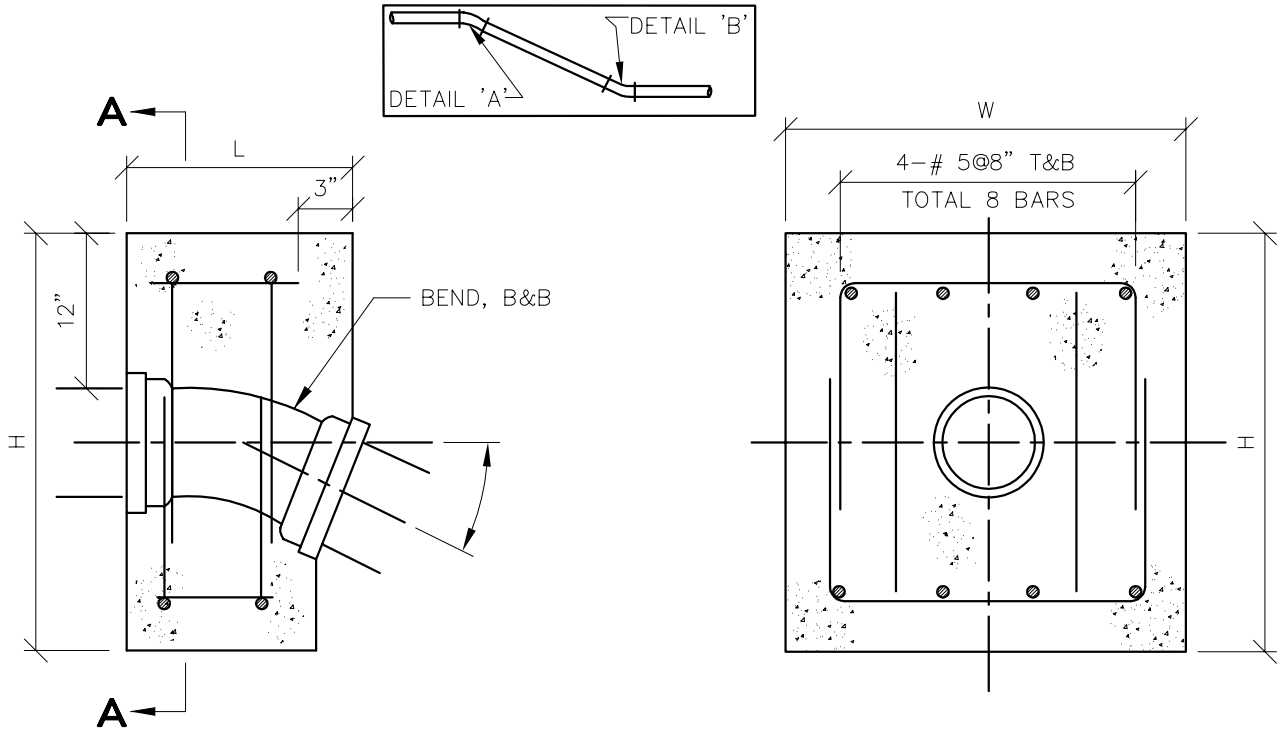

ELEVATION

SECTION A-A

SIZE OF PIPE (INCHES)	DEGREE OF BEND	AREA (SQUARE INCHES)	THRUST FORCE (POUNDS)	CONCRETE VOLUME (CUBIC FT)	L (INCHES)	H (INCHES)	W (INCHES)
8	22.5	64.3	3,691.0	36.9	19	48	70
12	22.5	136.8	7,852.7	78.5	24	60	94
16	22.5	237.7	13,644.6	136.4	26	60	151
24	22.5	522.7	30,004.3	300.0	30	60	288
8	45	64.3	6,820.0	68.2	24	48	102
12	45	136.8	14,509.8	145.1	28	54	166
16	45	237.7	25,211.9	252.1	32	60	227
24	45	522.7	55,440.7	554.4	36	72	370

NOTE

THE DESIGN ENGINEER IS RESPONSIBLE FOR ENSURING THAT THE THRUST BLOCKS ARE CORRECTLY SIZED FOR EACH APPLICATION. CALCULATIONS FOR GRAVITY THRUST BLOCK TO SUPPORT VERTICAL BEND DOWNWARD ARE BASED ON EQUATIONS AND CONSTANTS TAKEN FROM AMERICAN WATER WORKS ASSOCIATION DUCTILE-IRON PIPE AND FITTINGS (AWWA M41):

1. D.W.S.D. TEST PRESSURE USED IS 150 POUNDS/SQUARE INCH.
2. SAFETY FACTOR IS 1.5.
3. WEIGHT OF CONCREETE IS 150 POUNDS/CUBIC FOOT.

DETAIL "A"

C					
B					
A					
	DESCRIPTION	DRW	CKD	APP	DATE
REVISIONS					
DRAWN BY: S.D.A.					
CHECKED BY: S.D.A.					
APPROVED:					

THRUST BLOCK, VERTICAL BEND (AWWA SIZING)

SCALE: NONE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SHEET 1 OF 2

DWG No. 02620-24