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PROJECT REFERENCE NO.	SHEET NO.
I-5987B	UC-3C
DESIGNED BY: BLP	
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UTILITY CONSTRUCTION PLANS ONLY

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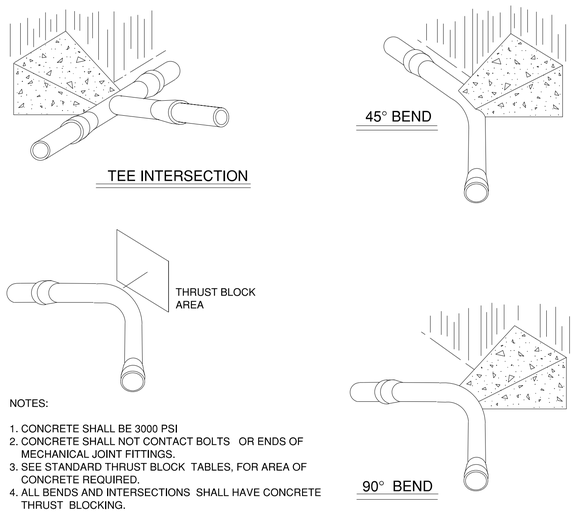
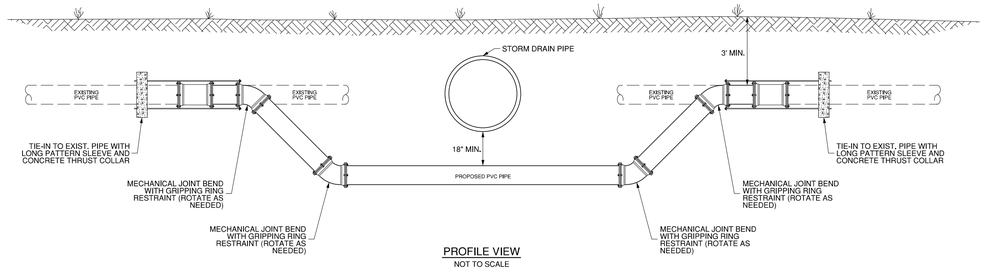
UTILITY CONSTRUCTION



NOTES:

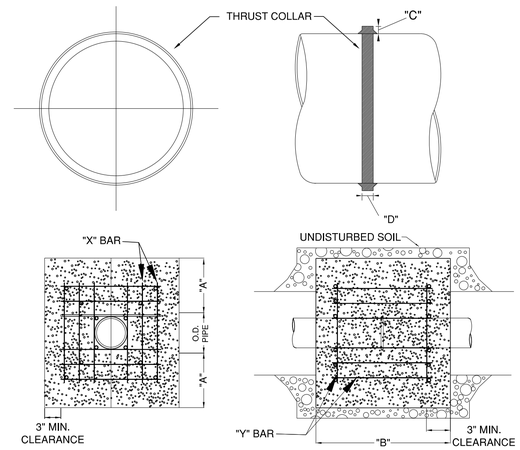
1. CONCRETE SHALL BE 3000 PSI
2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
3. SEE STANDARD THRUST BLOCK TABLES, FOR AREA OF CONCRETE REQUIRED.
4. ALL BENDS AND INTERSECTIONS SHALL HAVE CONCRETE THRUST BLOCKING.

THRUST BLOCKING



PROFILE VIEW
NOT TO SCALE

STANDARD DETAIL FOR UTILITY RELOCATION FOR STORM DRAIN CONFLICT



REINFORCING REQUIREMENTS

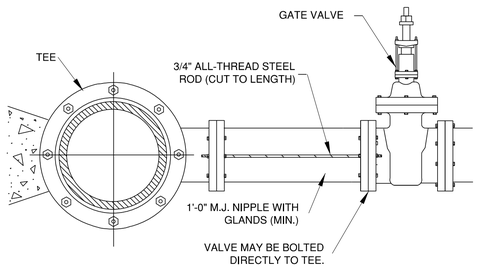
I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WEIGHT	"Y" BAR LENGTH	"Y" BAR WEIGHT	NO. REQUIRED
6" - 36"	#5	2'-2"+ O.D. PIPE	1.043 LBS/FT	1'-1"	1.1 LBS. EACH	X-24, Y-12

THRUST COLLAR, AND THRUST SCHEDULE

I.D. PIPE	"A"	"B"	"C"	"D"
6" - 16"	1'-4"	1'-7"	2"	3/8"

NOTES:
1. CONCRETE SHALL BE 3000 PSI AND TRANSIT MIXED.
2. REINFORCING BARS SHALL BE DEFORMED AND TIED TOGETHER.
3. THRUST COLLAR MUST BE FACTORY WELDED ON BOTH SIDES ALONG BOTH EDGES OF COLLAR AROUND CIRCUMFERENCE.

THRUST BLOCKING DESIGN DATA FOR WATER MAINS



ROD REQUIREMENTS	
BRANCH SIZE	NO. OF RODS
6"	2
8"	4

NOTES:
1. STEEL RODS AND BOLTS SHALL BE 3/4" HOT DIPPED GALVANIZED.
2. SEE STANDARD THRUST BLOCK TABLE FOR CONCRETE.
3. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
4. THIS RODDING REQUIREMENT DOES NOT APPLY TO FIRE HYDRANTS.

VALVE RESTRAINT

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 200 P.S.I.
ALL AREAS GIVEN IN SQUARE FEET.

SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	MODERATELY DRY CLAY 4000 LBS/FT²	SOFT CLAY 2000 LBS/FT²	1600 LBS/FT² GRAVEL / COARSE SAND	8000 LBS/FT² DRY CLAY - ALWAYS DRY	SAND, COMPACT FIRM 8000 LBS/FT²	SAND - CLEAN DRY 4000 LBS/FT²	SOIL 1000 LBS/FT² QUICKSAND - VERY POOR	ROCK - POOR 10,000 LBS/FT²
6"									
11 1/4°	1,108	1	1	1	1	1	2	1	
22 1/2°	2,207	1	2	2	1	1	3	1	
45°	4,328	2	3	3	1	1	2	5	1
90°	7,996	2	4	5	1	1	2	8	1
PLUG	5,655	2	3	4	1	1	2	6	1
8"									
11 1/4°	1,970	1	1	2	1	1	1	2	1
22 1/2°	3,922	1	2	3	1	1	1	4	1
45°	7,694	2	4	5	1	1	2	8	1
90°	14,215	4	8	9	2	2	4	15	2
PLUG	10,053	3	5	6	2	2	3	10	1

NOTES:
1. REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
2. USE 6" - 90 BEND VALUE FOR HYDRANTS FOR ADDITIONAL SAFETY FACTOR.

THRUST BLOCKING DESIGN QUANTITY TABLE