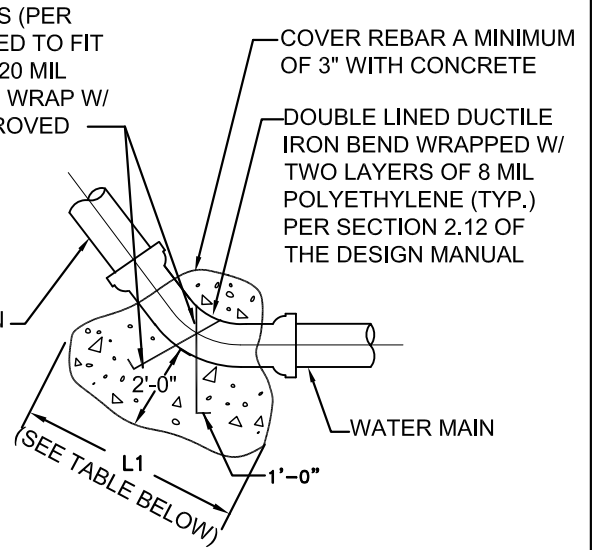


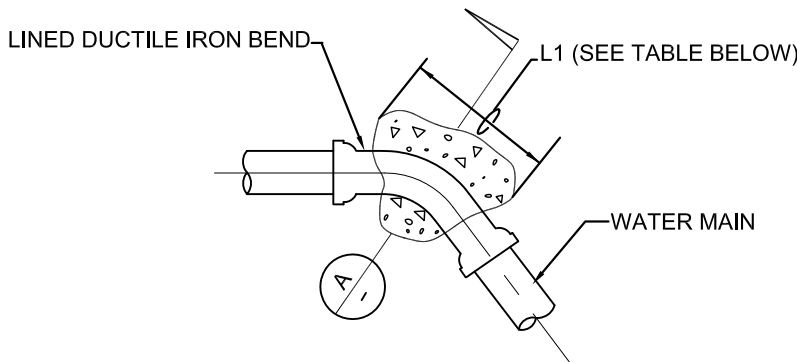
PROFILE

TYPICAL VERTICAL RESTRAINT



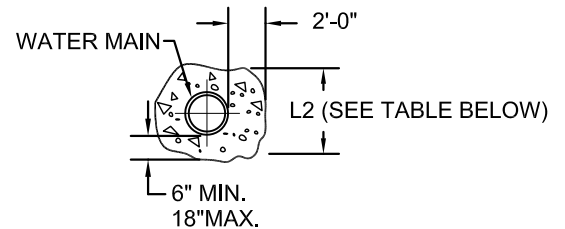
PROFILE

TYPICAL VERTICAL THRUST BLOCK



PLAN

TYPICAL THRUST BLOCK HORIZONTAL



SECTION A

TYPICAL THRUST BLOCK HORIZONTAL

NOTES:

1. BEARING SURFACE OF ALL THRUST BLOCKS TO BE POURED AGAINST FIRM UNDISTURBED EARTH (FULL BEARING STRENGTH).
2. ALL CONCRETE TO BE 560-C-3250 (6-SACK CONCRETE MIX)
3. SPECIAL DESIGN REQUIRED FOR PRESSURES EXCEEDING 200 PSI, SOIL PRESSURES LESS THAN 2000 PSF, AND FOR FITTINGS LARGER THAN 12" DIAMETER.

THRUST BLOCK DIMENSIONS																
PIPE SIZE.	0 ° TO 11 1/4°			11 1/4° TO 22 1/2°			22 1/2° TO 45°			45° TO 90°			DEAD ENDS & TEES		PIPE SIZE.	
	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY	VERT. REBAR	HORIZ. L1 L2	VERT. VOL. CY		
6"	1.0 x 1.0	0.4	#6	1.0 x 1.5	0.8	#6	1.5 x 2.0	1.5	#6	2.0 x 3.0	2.7	#6	2.0 x 2.0	1.9	6"	
8"	1.0 x 1.5	0.6	#6	1.5 x 2.0	1.3	#6	2.0 x 3.0	2.5	#6	3.0 x 3.5	4.7	#6	2.5 x 3.0	3.3	8"	
10"	1.0 x 2.0	1.1	#6	2.0 x 2.0	2.1	#6	3.0 x 3.0	4.1	#6	4.0 x 4.0	7.6	#8	3.0 x 4.0	5.4	10"	
12"	1.5 x 2.0	1.5	#6	2.0 x 2.0	3.0	#6	3.0 x 4.0	5.9	#6	4.5 x 5.0	10.8	#8	4.0 x 4.0	7.6	12"	
14"	2.0 x 2.0	2.0	#6	3.0 x 3.0	4.0	#6	4.0 x 4.0	8.0	#8	6.0 x 5.5	14.7	#8	4.5 x 5.0	10.4	14"	
16"	2.0 x 3.0	2.6	#6	3.0 x 3.5	5.2	#6	4.5 x 5.0	10.3	#8	7.0 x 5.5	19.0	#10	5.0 x 5.5	13.4	16"	

TABLE BASED ON 200 PSI PRESSURE AND 2000 PSF ALLOWABLE SOIL BEARING PRESSURE.

Revision	By	Approved	Date
07/19/04	AC		
03/16/05	AC		
04/14/05	DW		
06/04/07	AC		
01/04/16	MU		
07/01/17	SM		08/01/17

CITY OF OCEANSIDE

TYPICAL THRUST BLOCK

Anna E. Strapan 9/17/17
CITY ENGINEER Date

STANDARD DRAWING NO. **W-27**