



NOTES:

1. MAINTAIN 18" MINIMUM COVER OVER THE TOP OF BLOCK.
2. BOTTOM OF BLOCK IS TO BE ON UNDISTURBED SOIL.
3. BLOCKS SHALL NOT BE INSTALLED ON TOP OF PIPE JOINT.
4. PVC SLEEVE IS TO ALLOW FOR PIPE REMOVAL FROM THRUST BLOCK WITHOUT DAMAGE TO BLOCK FOR ANY FUTURE MAINTENANCE.
5. TRENCH TO BE BACKFILLED AND COMPACTED TO 95% DENSITY ON ALL SIDES OF BLOCK AND A DISTANCE OF 4' MIN. IN FRONT OF BLOCK TO FULL DEPTH OF BLOCK.
6. IF BLOCK CANNOT BE KEYED INTO UNDISTURBED SOIL TO THE SATISFACTION OF THE CITY, a) THE BLOCK LENGTH SHALL BE EXTENDED TO PROVIDE AN ADEQUATE KEY OR b) CDF SHALL BE USED TO FILL BACK TO NATIVE SOIL OR c) THE TRENCH SHALL BE BACKFILLED AND COMPACTED TO 95% DENSITY A MINIMUM DISTANCE OF 15 FEET IN FRONT OF THE BLOCK TO THE SATISFACTION OF THE CITY.

PVC SLEEVE TABLE

WATER MAIN PIPE DIAMETER	DI PIPE O.D.	MIN. PVC SLEEVE PIPE SIZE
4"	4.80"	6"
6"	6.90"	8"
8"	9.05"	10"
12"	13.20"	16"
16"	17.40"	20"

APPROVED _____ City Engineer	CITY OF BELLINGHAM REVERSE THRUST BLOCK	DRAWING WA-867 1 OF 2
_____ Date		

REVERSE THRUST BLOCK CALCULATIONS

TEST PRESSURE (psi) = 250
 SOIL TYPE = SOFT CLAY
 SAFE SOIL BEARING LOAD = 1,000
 SAFETY FACTOR 1.5

PIPE DIAMETER (in)	THRUST FORCE (lb)	BLOCK BEARING AREA (sf)	EXAMPLE DIMENSIONS		T (feet)	REINFORCING
			H (feet)	L (feet)		
6	7,069	10.6	3.1	7.0	1.5	#4 @ 12" ON-CENTER, EACH WAY
8	12,566	18.8	3.7	7.4	1.5	#4 @ 12" ON-CENTER, EACH WAY
12	28,274	42.4	5.2	10.3	2.0	#4 @ 8" ON-CENTER, EACH WAY
18	63,617	95.4	7.5	14.7	2.5	#4 @ 6" ON-CENTER, EACH WAY

TEST PRESSURE (psi) = 250
 SOIL TYPE = SAND
 SAFE SOIL BEARING LOAD = 2,000
 SAFETY FACTOR 1.5

PIPE DIAMETER (in)	THRUST FORCE (lb)	BLOCK BEARING AREA (sf)	EXAMPLE DIMENSIONS		T (feet)	REINFORCING
			H (feet)	L (feet)		
6	7,069	5.3	3.1	7.0	1.5	#4 @ 12" ON-CENTER, EACH WAY
8	12,566	9.4	3.3	7.2	1.5	#4 @ 12" ON-CENTER, EACH WAY
12	28,274	21.2	4.1	7.9	2.0	#4 @ 8" ON-CENTER, EACH WAY
18	63,617	47.7	5.6	11.2	2.5	#4 @ 6" ON-CENTER, EACH WAY

TEST PRESSURE (psi) = 250
 SOIL TYPE = SAND AND GRAVEL
 SAFE SOIL BEARING LOAD = 3,000
 SAFETY FACTOR 1.5

PIPE DIAMETER (in)	THRUST FORCE (lb)	BLOCK BEARING AREA (sf)	EXAMPLE DIMENSIONS		T (feet)	REINFORCING
			H (feet)	L (feet)		
6	7,069	3.5	3.1	7.0	1.5	#4 @ 12" ON-CENTER, EACH WAY
8	12,566	6.3	3.3	7.2	1.5	#4 @ 12" ON-CENTER, EACH WAY
12	28,274	14.1	3.6	7.5	2.0	#4 @ 8" ON-CENTER, EACH WAY
18	63,617	31.8	4.9	9.6	2.5	#4 @ 6" ON-CENTER, EACH WAY

APPROVED

 City Engineer

 Date

CITY OF BELLINGHAM

REVERSE THRUST BLOCK

DRAWING

WA-867
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