



DESIGN ENGINEER SHALL CALCULATE PROPER VALUES PER DIPRA PUBLICATION "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" (LATEST EDITION) AND FILL IN TABLE PRIOR TO SUBMITTAL.

MINIMUM DESIGN CRITERIA  
 BEDDING TYPE: 2  
 DESIGN PRESSURE: 150 PSI.  
 SAFETY FACTOR: 1.5  
 DEPTH OF COVER: 3.0 FT.

MINIMUM FOOTAGE OF PIPE RESTRAINT:  
 H-B: HORIZONTAL BEND  
 VU-B: VERTICAL-UP BEND  
 VD-B: VERTICAL-DOWN BEND

		PIPE SIZE				
11-1/4"	H-B					
	VU-B					
	VD-B					
22-1/2"	H-B					
	VU-B					
	VD-B					
45°	H-B					
	VU-B					
	VD-B					
90°	H-B					
	VU-B					
	VD-B					
DEAD END PLUG	H-B					
	VU-B					
	VD-B					
TEE	H-B					
	VU-B					
	VD-B					

**NOTES:**

- FOR LENGTH OF PIPE AND NUMBER OF JOINTS TO BE RESTRAINED SEE TABLE (THIS PAGE).
- ONLY DUCTILE IRON FITTINGS SHALL BE USED AT JOINTS TO BE RESTRAINED UNLESS OTHERWISE SPECIFIED BY CITY.

**CITY OF GROVELAND STANDARD DETAILS: GENERAL**



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**RESTRAINED JOINTS  
 DETAILS**

DATE: JULY 7, 2008  
 SCALE: N.T.S.

**G-7**