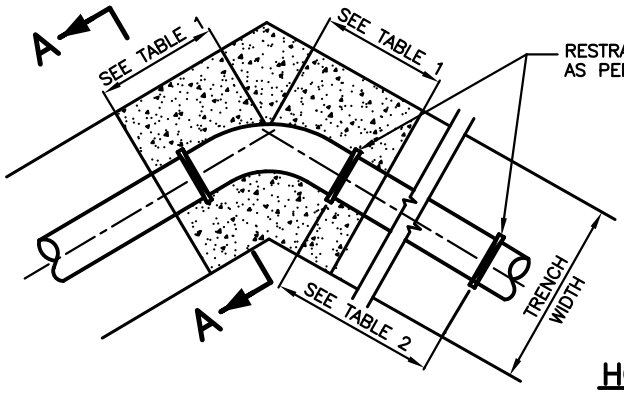
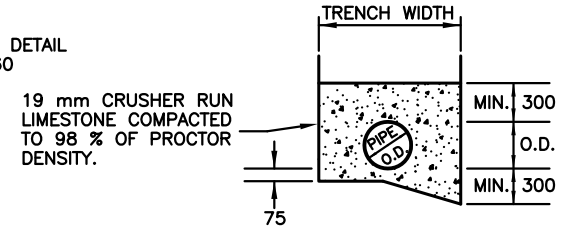
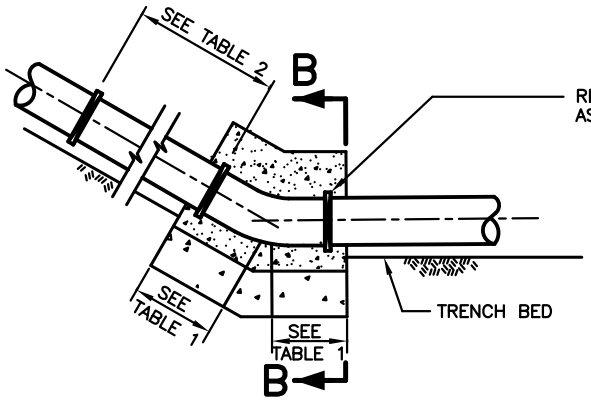
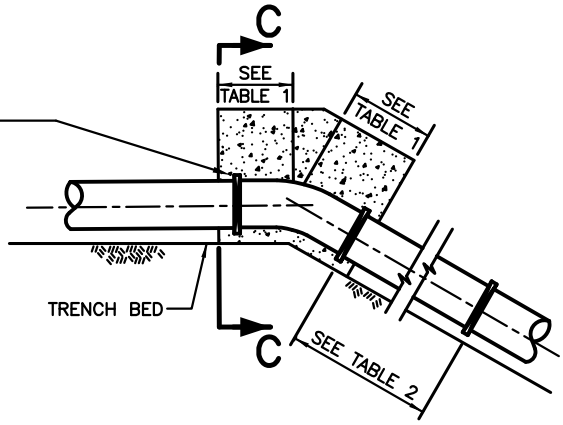


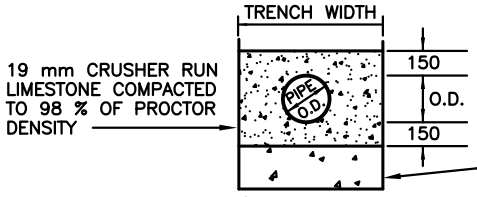


SECTION A–A

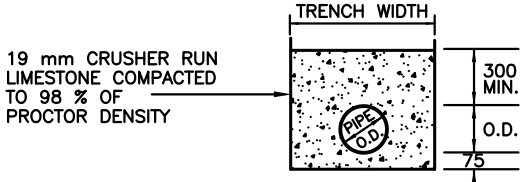
HORIZONTAL DEFLECTION







SECTION B–B
DOWNWARD THRUST



SECTION C–C
UPWARD THRUST

VERTICAL DEFLECTION

NOTES

1. ALL JOINTS ENCOUNTERED WITHIN THE SPECIFIED RESTRAINING LENGTH "L" SHALL BE RESTRAINED ON EACH SIDE OF THE FITTING.
2. GRANULAR THRUST BLOCKS SHALL BE FULLY EXTENDED AND COMPACTED AGAINST TRENCH WALLS.
3. IF THE BEARING CAPACITY OF TRENCH BED RESISTING DOWNWARD THRUST IS LESS THAN 100 KN/m2, CLEAR STONE FOUNDATION SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
4. WHEN FITTINGS ARE PARTIALLY OR FULLY EXPOSED UNDER PRESSURE, ALL JOINTS MUST BE RESTRAINED.
5. ALL FITTING JOINTS SHALL BE RESTRAINED IN EARTH FILL APPLICATIONS. JOINT RESTRAINTS ARE NOT REQUIRED FOR STRAIGHT RUNS IN ENGINEERED FILL APPLICATIONS.
6. CATHODIC PROTECTION, BONDING CABLE AND TRACER WIRE SHALL BE AS PER S-201.030, S-201.031.

TABLE NO. 1

MINIMUM DIMENSION FOR GRANULAR THRUST BLOCKS				
DEFL. ANGLE	PIPE DIAMETER (mm)			
	100&150	200	300	400
11.25°	400	500	600	700
22.5°	400	500	600	700
45°	450	550	650	750
90°	600	700	850	950

TABLE NO. 2

"L" MINIMUM RESTRAINING LENGTH (m) * ON EACH SIDE OF FITTING										
PIPE DIA. (mm)	VERTICAL DEFLECTION						HORIZONTAL DEFLECTION			
	DOWNWARD THRUST			UPWARD THRUST						
	11.25°	22.5°	45°	11.25°	22.5°	45°	11.25°	22.5°	45°	90°
100&150	1.5	2.8	4.9	4.9	7.5	10.1	1.5	2.8	4.9	8.1
200	2.0	3.7	6.3	6.3	9.6	13.1	2.0	3.7	6.3	10.5
300	2.8	5.2	9.0	8.8	13.4	18.3	2.8	5.2	9.0	14.9
400	3.6	6.7	11.6	11.2	17.2	23.7	3.6	6.7	11.6	19.3

ALL DIMENSIONS IN MILLIMETRES EXCEPT WHERE NOTED

DURHAM REGION
WORKS DEPARTMENT

JOINT RESTRAINING LENGTH FOR PVC PIPE (IN COMBINATION WITH GRANULAR THRUST BLOCK)

DWG. DATE: 1991 11
REVISION NO.: 6
REV. DATE: 2013 04
SCALE: N.T.S.

S-200.050