THRUST LOADS

PIPE DIAMETER	90° BEND	45° BEND	22 - 1/2" BEND	11 - 1/2" BEND	DEAD END OR TEE
4"	3,600	2000	1,000	500	2,600
6'	8,000	4,400	2,300	1,200	5,700
8"	14,300	7,700	4,000	2,000	10,100
10"	22,300	12,100	6,200	3,100	15,800
12"	32,000	17,400	8,900	4,500	22,700
14"	43,600	23,600	12,100	6,100	30,800
16"	57,000	30,800	15,700	7,900	40,300

NOTES:

1. BLOCKING SHALL BE COMMERCIAL CONCRETE IN PLACE AGAINST UNDISTURBED EARTH. FITTING SHALL BE ISOLATED FROM CONCRETE THRUST BLOCK WITH PLASTIC OR SIMILAR MATERIAL.

2. TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (S.F.):

   EXAMPLE: 12" - 90° BEND IN SAND AND GRAVEL
   32,000 LBS DIVIDED BY SOIL BEARING LOAD EQUALS 10.7 S.F. OF AREA.
   SOIL BEARING LOAD TO BE DETERMINED PER SOILS REPORT.

3. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZE, FITTING PRESSURES AND SOIL CONDITIONS.

4. ALL THRUST BLOCKS TO BE CLASS 4000 CONCRETE.

Kelso Longview Cities Working Together

THRUST LOADS

STANDARD PLAN: **W - 220**

DATE: **FEB. 2007**

CITY ENGINEER APPROVAL:

Longview: **C.B.**

Kelso: **S.Z.**