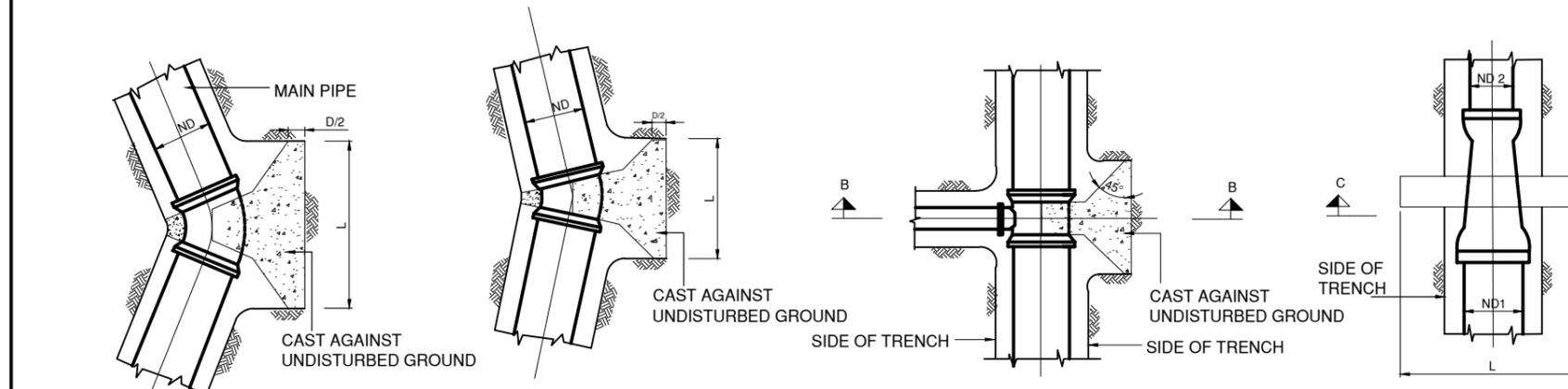


**PLAN**  
**90° HORIZONTAL BEND**

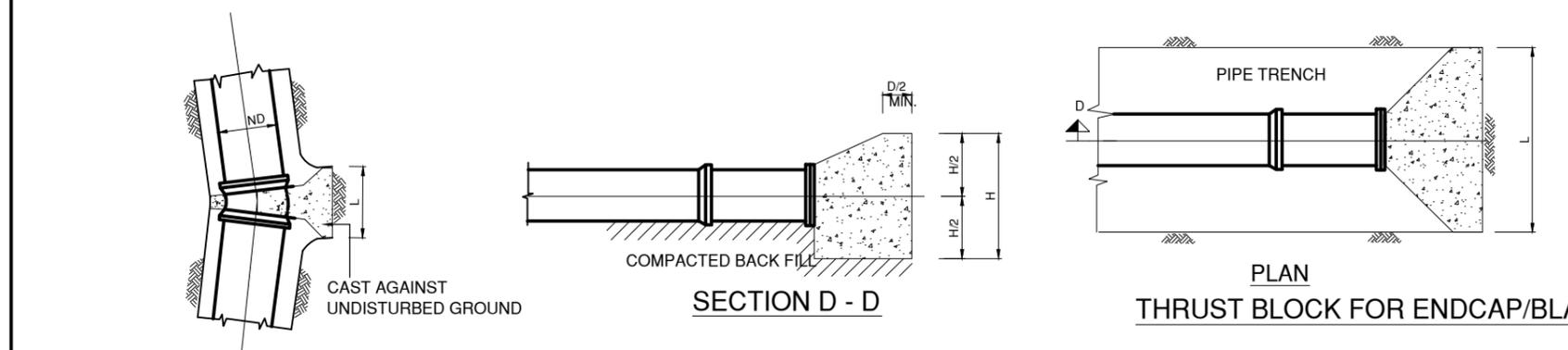


**PLAN**  
**45° HORIZONTAL BEND**

**PLAN**  
**22 1/2° HORIZONTAL BEND**

**PLAN**  
**THRUST BLOCK FOR TEE**

**PLAN**  
**THRUST BLOCK FOR TAPER**

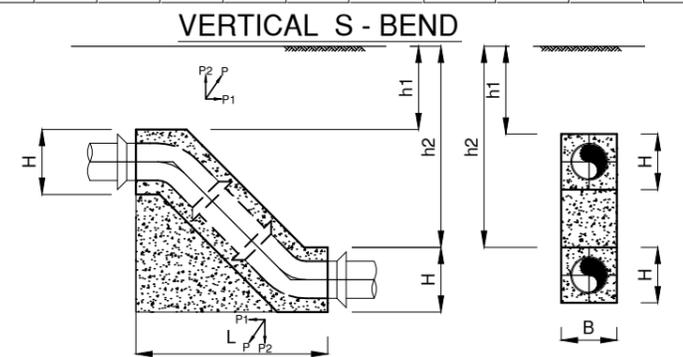


**PLAN**  
**11 1/4° HORIZONTAL BEND**

**PLAN**  
**THRUST BLOCK FOR ENDCAP/BLANK FLANGE**

**DIMENSIONS OF THRUST BLOCKS FOR DIFFERENT TEST PRESSURES**

| TEST PRESSURE | D mm DI PIPE | D mm PE PIPE | BENDS   |      |         |      |      |      |      |      | TEES |      |
|---------------|--------------|--------------|---------|------|---------|------|------|------|------|------|------|------|
|               |              |              | 11 1/4° |      | 22 1/2° |      | 45°  |      | 90°  |      | L    | H    |
|               |              |              | L       | H    | L       | H    | L    | H    | L    | H    |      |      |
| 6 bar         | 80           | 90           | 0.16    | 0.16 | 0.16    | 0.16 | 0.24 | 0.16 | 0.26 | 0.26 | 0.22 | 0.22 |
|               | 100          | 110          | 0.20    | 0.20 | 0.20    | 0.20 | 0.29 | 0.20 | 0.33 | 0.33 | 0.27 | 0.27 |
|               | 150          | 160          | 0.23    | 0.23 | 0.28    | 0.23 | 0.55 | 0.23 | 0.48 | 0.48 | 0.40 | 0.40 |
|               | 200          | 225          | 0.30    | 0.30 | 0.36    | 0.30 | 0.71 | 0.30 | 0.63 | 0.63 | 0.53 | 0.53 |
|               | 250          | 280          | 0.38    | 0.38 | 0.43    | 0.38 | 0.85 | 0.38 | 0.77 | 0.77 | 0.64 | 0.64 |
| 10 bar        | 300          | -            | 0.38    | 0.38 | 0.60    | 0.38 | 1.17 | 0.38 | 0.90 | 0.90 | 0.76 | 0.76 |
|               | 50           | 63           | 0.10    | 0.10 | 0.13    | 0.10 | 0.25 | 0.10 | 0.22 | 0.22 | 0.18 | 0.18 |
|               | 80           | 90           | 0.16    | 0.16 | 0.20    | 0.16 | 0.39 | 0.16 | 0.34 | 0.34 | 0.29 | 0.29 |
|               | 100          | 110          | 0.20    | 0.20 | 0.25    | 0.20 | 0.48 | 0.20 | 0.42 | 0.42 | 0.35 | 0.35 |
|               | 150          | 160          | 0.24    | 0.23 | 0.47    | 0.23 | 0.91 | 0.23 | 0.61 | 0.62 | 0.52 | 0.52 |
| -             | 200          | 225          | 0.30    | 0.30 | 0.60    | 0.30 | 1.18 | 0.30 | 0.81 | 0.81 | 0.68 | 0.68 |
|               | 250          | 280          | 0.38    | 0.38 | 0.72    | 0.38 | 1.41 | 0.38 | 0.99 | 0.99 | 0.83 | 0.83 |
|               | 300          | -            | 0.50    | 0.38 | 1.00    | 0.38 | 1.96 | 0.38 | 1.16 | 1.16 | 0.98 | 0.98 |



| WATER PRESSURE (Bar) | PIPE NOMINAL OUT SIDE DIAMETER D (mm) | DEGREE OF BEND (Deg) | DIMENSION |       |       |        |        |
|----------------------|---------------------------------------|----------------------|-----------|-------|-------|--------|--------|
|                      |                                       |                      | B (m)     | H (m) | L (m) | h1 (m) | h2 (m) |
| 6/10                 | 90                                    | 45                   | 0.30      | 0.30  | 2.00  | 0.90   | 1.90   |
| 6/10                 | 100                                   | 45                   | 0.60      | 0.60  | 2.00  | 0.75   | 1.75   |
| 6/10                 | 110                                   | 45                   | 0.60      | 0.60  | 2.00  | 0.76   | 1.76   |
| 6/10                 | 160                                   | 45                   | 0.75      | 0.60  | 2.50  | 0.78   | 1.78   |
| 6/10                 | 200                                   | 45                   | 0.80      | 0.80  | 3.00  | 0.70   | 1.70   |
| 6/10                 | 225                                   | 45                   | 0.85      | 0.85  | 3.00  | 0.69   | 1.69   |
| 6/10                 | 280                                   | 45                   | 1.00      | 0.90  | 4.00  | 0.70   | 1.70   |
| 10/16                | 150                                   | 45                   | 0.80      | 0.60  | 2.80  | 0.78   | 1.78   |
| 10/16                | 200                                   | 45                   | 1.00      | 0.50  | 3.20  | 0.85   | 1.85   |
| 10/16                | 250                                   | 45                   | 1.00      | 0.70  | 4.00  | 0.78   | 1.78   |
| 10/16                | 300                                   | 45                   | 1.00      | 0.90  | 5.00  | 0.70   | 1.70   |
| 10/16                | 350                                   | 45                   | 1.30      | 0.90  | 5.00  | 0.73   | 1.73   |
| 10/16                | 400                                   | 45                   | 1.50      | 0.70  | 5.00  | 0.85   | 1.85   |
| 10/16                | 500                                   | 45                   | 1.80      | 0.80  | 5.60  | 0.85   | 1.85   |
| 10/16                | 600                                   | 45                   | 2.20      | 0.90  | 6.00  | 0.85   | 1.85   |

1. THE DIMENSIONS OF THRUST BLOCKS ARE GIVEN IN METERS.
2. WHEN TWO PIPELINES ARE LAID IN COMMON TRENCH, THE BENDS SHALL BE STAGGERED TO MAKE WAY FOR INDEPENDENT THRUST BLOCKS. WHEN STAGGERING OF BENDS IS NOT POSSIBLE, THE THRUST BLOCK SHALL HAVE THE COMBINED AREA OF L X H REQUIRED FOR BOTH BENDS.
3. THE ABOVE DIMENSIONS OF THRUST BLOCKS ARE VALID FOR NON SUBMERGED CONDITION ONLY. FOR SUBMERGED CONDITION, DOUBLE THE EFFECTIVE LATERAL AREA (LXH).
4. L AND H MAY BE ALTERED TO SUIT SITE, BUT THE LATERAL AREA (LXH) SHALL REMAIN THE SAME OR GREATER.
5. WHEN ANCHOR GASKETS ARE USED, THE AREA (LXH) MAY BE REDUCED BY 50%.
6. THE THRUST BLOCKS SHALL EXTEND FROM THE FITTING UP TO THE UNDISTURBED FACE OF THE PIPE TRENCH.
7. ALL THRUST BLOCKS SHALL BE OF GRADE 20 CONCRETE.

|  |  |          |                            |              |          |       |           |             |
|--|--|----------|----------------------------|--------------|----------|-------|-----------|-------------|
|  <p>CLIENT:<br/>MINISTRY OF ENVIRONMENT AND ENERGY</p>  | <p>CONSULTANCY SERVICES FOR DESIGN OF WATER SUPPLY FACILITIES IN Ha.HORAFUSHI, Hdh.HANIMAADHOO, Sh.MILANDHOO, R.UNGOOFAARU, Lh.NAIFARU, Dh.KUDAHUVADHOO, Th.GURAIIDHOO AND Ga.VILLINGILI, MALDIVES</p> | DESIGN   | DRAWN                      | CHECKED      | APPROVED | SL.NO | DRWING NO | DESCRIPTION |
|  |  | ENGINEER |                            | DESIGN CHIEF |          |       |           |             |
|  <p>GREENTECH CONSULTANTS (Pvt.) Ltd IN ASSOCIATION WITH DEVELOPMENT COLLABORATION PARTNERSHIP (Pvt.) Ltd MALDIVES AND OPTIMUM SOLOUTIONS (Pvt) Ltd, MALDIVES</p> | <p>TITLE:<br/><b>THRUST BLOCKS DISTRIBUTION NETWORK</b><br/>HANIMAADHOO</p>  | DATE     | DRG.NO: HANIMAADHOO/STD/03 |              |          |       |           |             |
|  |  |          | SCALE: NOT TO SCALE        |              |          |       |           |             |