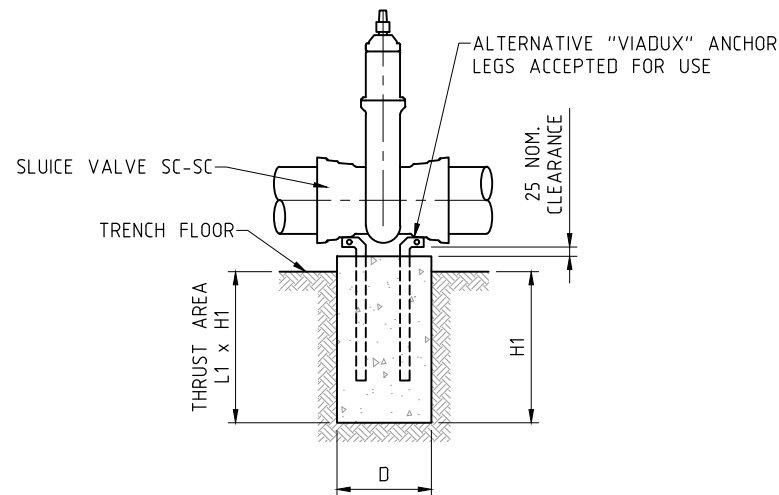
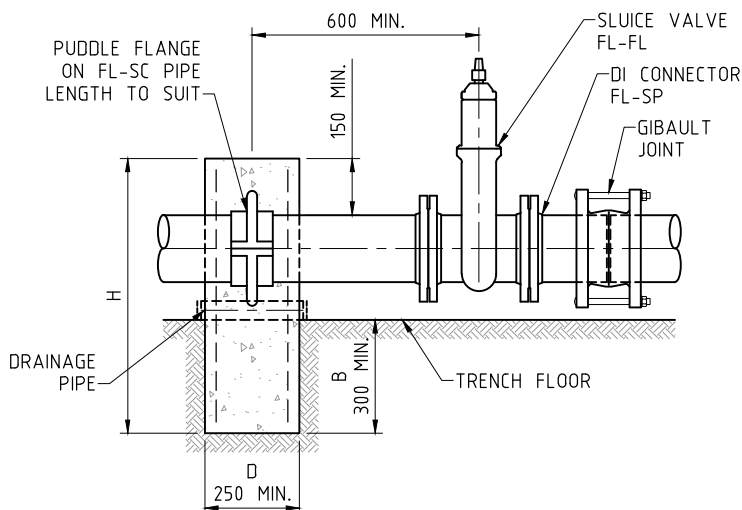


**THRUST BLOCK**  
**SOCKETED STRAPPED VALVES <= DN375**  
REFER NOTE 10.

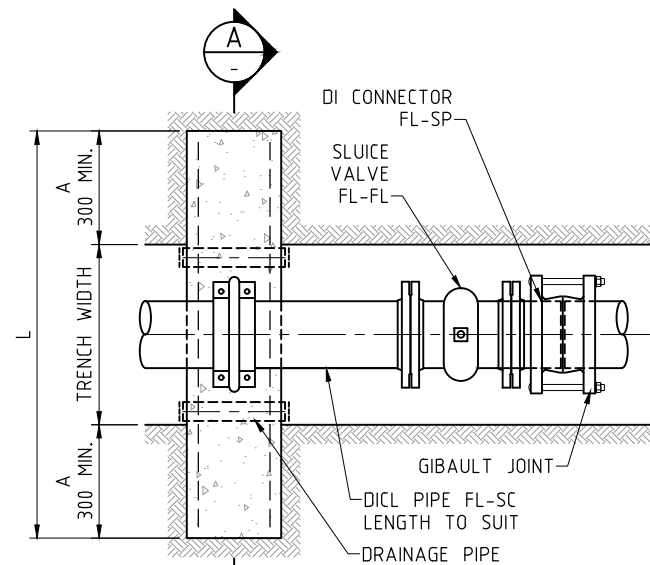


**THRUST BLOCK**  
**"VIADUX" THRUST RESTRAINT SYSTEM**  
(DN100 OR DN150 ONLY)



ELEVATION

**THRUST BLOCK**  
**FLANGED VALVES**



PLAN

**THRUST BLOCK NOTES**

1. ALL DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. POUR BASE CONCRETE AGAINST A SOLID EXCAVATION FACE.
3. USE GRADE N32 CONCRETE FOR REINFORCED THRUST BLOCKS. GRADE N20 FOR NON-REINFORCED.
4. REINFORCEMENT IS NOT NECESSARY FOR THRUST BLOCKS WHERE VALVES ARE <= DN150.
5. KEEP CONCRETE CLEAR OF ALL BOLTS, NUTS AND PIPE JOINTS.
6. THRUST BLOCK DIMENSIONS CAN BE INDIVIDUALLY ADJUSTED TO SUIT LOCATION. MINIMUM THRUST AREA MUST BE ACHIEVED. KEY INTO SIDES OF TRENCH TO REDUCE THRUST BLOCK DEPTH.
7. FOR VALVES LARGER THAN DN375 INDIVIDUAL DETAILED DESIGN IS REQUIRED. THE DESIGNER IS TO NOMINATE DIMENSIONS L, D, B, A, H AND H1 TO SUIT LOCATIONS.
8. IF THRUST BLOCK WIDTH "L" IS REQUIRED TO BE WITHIN THE ALLOCATED CORRIDOR, GENERALLY 800mm WIDE BEARING AREA IS TO BE PREDOMINANTLY BELOW THE BEDDING ZONE. IMPACTS OF WIDE BLOCKS ON ADJACENT SERVICES SHALL BE ADDRESSED.
9. THRUST AREA FOR DN100 AND DN150 FLANGED VALVES CAN BE LOCATED BELOW THE BEDDING ZONE (MIN. 300 INTO TRENCH WALL IS NOT REQUIRED). USE DIMENSION H1 x L1 FOR THRUST BLOCK SIZE.
10. SC-SC VALVES ARE PREFERRED FOR DN100 AND DN150.

**MINIMUM BLOCK DIMENSIONS FOR THE ANCHORAGE OF THE IN-LINE THRUST**

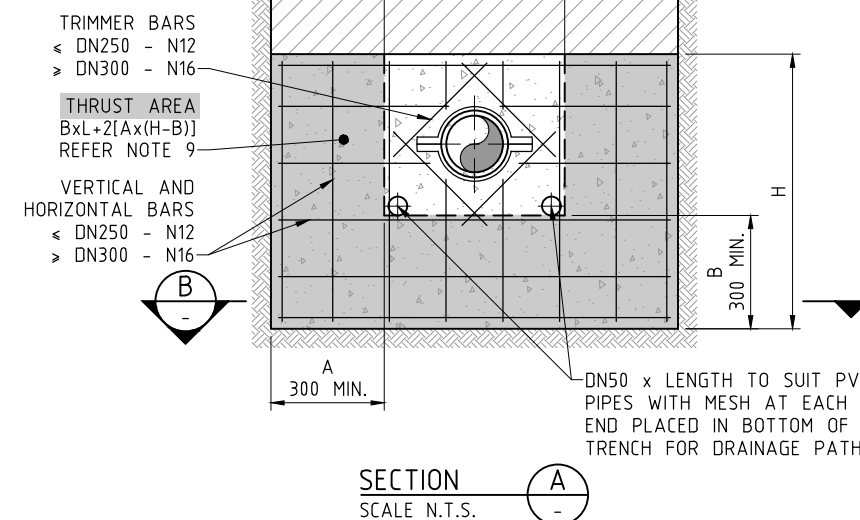
IN-LINE BLOCK FOR TEST PRESSURE OF 800kPa SOIL ALLOWABLE HORIZONTAL BEARING PRESSURE IN kPa's OF 50, 100 AND 150 LISTED (SEE NOTES)

| PIPE DN | DIMENSION                               | STIFF CLAY 50KPa | VERY STIFF CLAY SANDY LOAM 100KPa | SAND AND GRAVEL HARD CLAY 150KPa |
|---------|---|------------------|-----------------------------------|----------------------------------|
| 100     | 9.8kN THRUST                            |                  |                                   |                                  |
|         | MIN. THRUST BEARING AREA m <sup>2</sup> |                  |                                   |                                  |
|         |   | 0.20             | 0.10                              | 0.07                             |
|         | L                                       | 1000             | 1000                              | 1000                             |
|         | L1                                      | 400              | 400                               | 300                              |
|         | D                                       | 250              | 250                               | 250                              |
|         | B                                       | 300              | 300                               | 300                              |
| 150     | 20.5kN THRUST                           |                  |                                   |                                  |
|         | MIN. THRUST BEARING AREA m <sup>2</sup> |                  |                                   |                                  |
|         |   | 0.41             | 0.21                              | 0.14                             |
|         | L                                       | 1050             | 1050                              | 1050                             |
|         | L1                                      | 500              | 450                               | 400                              |
|         | D                                       | 250              | 250                               | 250                              |
|         | B                                       | 300              | 300                               | 300                              |
| 200     | 34.4kN THRUST                           |                  |                                   |                                  |
|         | MIN. THRUST BEARING AREA m <sup>2</sup> |                  |                                   |                                  |
|         |   | 0.67             | 0.34                              | 0.24                             |
|         | L                                       | 1100             | 1100                              | 1100                             |
|         | L1                                      | 800              | 500                               | 500                              |
|         | D                                       | 300              | 300                               | 300                              |
|         | B                                       | 350              | 300                               | 300                              |

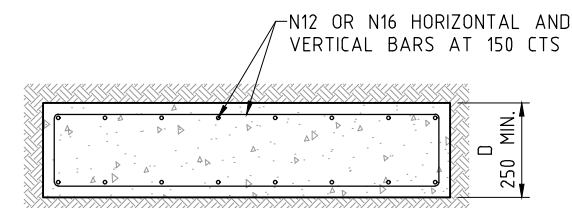
**MINIMUM BLOCK DIMENSIONS FOR THE ANCHORAGE OF THE IN-LINE THRUST**

IN-LINE BLOCK FOR TEST PRESSURE OF 800kPa SOIL ALLOWABLE HORIZONTAL BEARING PRESSURE IN kPa's OF 50, 100 AND 150 LISTED (SEE NOTES)

| PIPE DN | DIMENSION                               | STIFF CLAY 50KPa | VERY STIFF CLAY SANDY LOAM 100KPa | SAND AND GRAVEL HARD CLAY 150KPa |
|---------|---|------------------|-----------------------------------|----------------------------------|
| 225     | 43.5kN THRUST                           |                  |                                   |                                  |
|         | MIN. THRUST BEARING AREA m <sup>2</sup> |                  |                                   |                                  |
|         |   | 0.87             | 0.44                              | 0.29                             |
|         | L                                       | 1150             | 1150                              | 1150                             |
|         | L1                                      | 800              | 600                               | 600                              |
|         | D                                       | 300              | 300                               | 300                              |
|         | B                                       | 550              | 300                               | 300                              |
| 250     | 52.5kN THRUST                           |                  |                                   |                                  |
|         | MIN. THRUST BEARING AREA m <sup>2</sup> |                  |                                   |                                  |
|         |   | 1.05             | 0.53                              | 0.35                             |
|         | L                                       | 1200             | 1200                              | 1200                             |
|         | L1                                      | 850              | 700                               | 600                              |
|         | D                                       | 400              | 400                               | 400                              |
|         | B                                       | 600              | 300                               | 300                              |
| 300     | 77.1kN THRUST                           |                  |                                   |                                  |
|         | MIN. THRUST BEARING AREA m <sup>2</sup> |                  |                                   |                                  |
|         |   | 1.54             | 0.77                              | 0.51                             |
|         | L                                       | 1250             | 1250                              | 1250                             |
|         | L1                                      | 1200             | 770                               | 800                              |
|         | D                                       | 400              | 400                               | 400                              |
|         | B                                       | 900              | 300                               | 300                              |
| 375     | 117.3kN THRUST                          |                  |                                   |                                  |
|         | MIN. THRUST BEARING AREA m <sup>2</sup> |                  |                                   |                                  |
|         |   | 2.35             | 1.17                              | 0.78                             |
|         | L                                       | 1300             | 1300                              | 1300                             |
|         | L1                                      | 1200             | 1000                              | 800                              |
|         | D                                       | 500              | 500                               | 500                              |
|         | B                                       | 1500             | 600                               | 300                              |



SECTION A-A  
SCALE N.T.S.



SECTION B-B  
SCALE N.T.S.

| A     | ORIGINAL ISSUE    | A.A      | 24.11.21 |
|-------|-------------------|----------|----------|
| ISSUE | AMENDMENT DETAILS | INITIALS | DATE     |



**DESIGN UNIT**  
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|                 |                                       |      |           |
|-----------------|---------------------------------------|------|-----------|
| DESIGN ENGINEER | A.A.                                  | DATE | NOV. 2021 |
| W.W.U. MANAGER  | A.B.                                  | DATE | NOV. 2021 |
| DRAWN           | INFRASTRUCTURE DELIVERY UNIT - DESIGN |      |           |
| SCALE           | NOT TO SCALE                          |      |           |

|  |  |                 |                  |
|--|--|-----------------|------------------|
| PROJECT:   | <b>SEWERAGE RETICULATION STANDARDS</b>   | DRAWING NUMBER: | <b>S.D.232</b>   |
| DRAWING TITLE:   | <b>THRUST BLOCKS FOR VALVES AND INLINE THRUST SEWER MAINS - TEST PRESSURE 800kPa</b> |                 | <b>NOV. 2021</b> |
| ACAD FILE No: G:\_AAA TSC STANDARD DRAWINGS\200 SEWERAGE WORKS\CURRENT DRAWINGS\S.D.232 (Nov-21 Rev A).dwg |  |                 |                  |