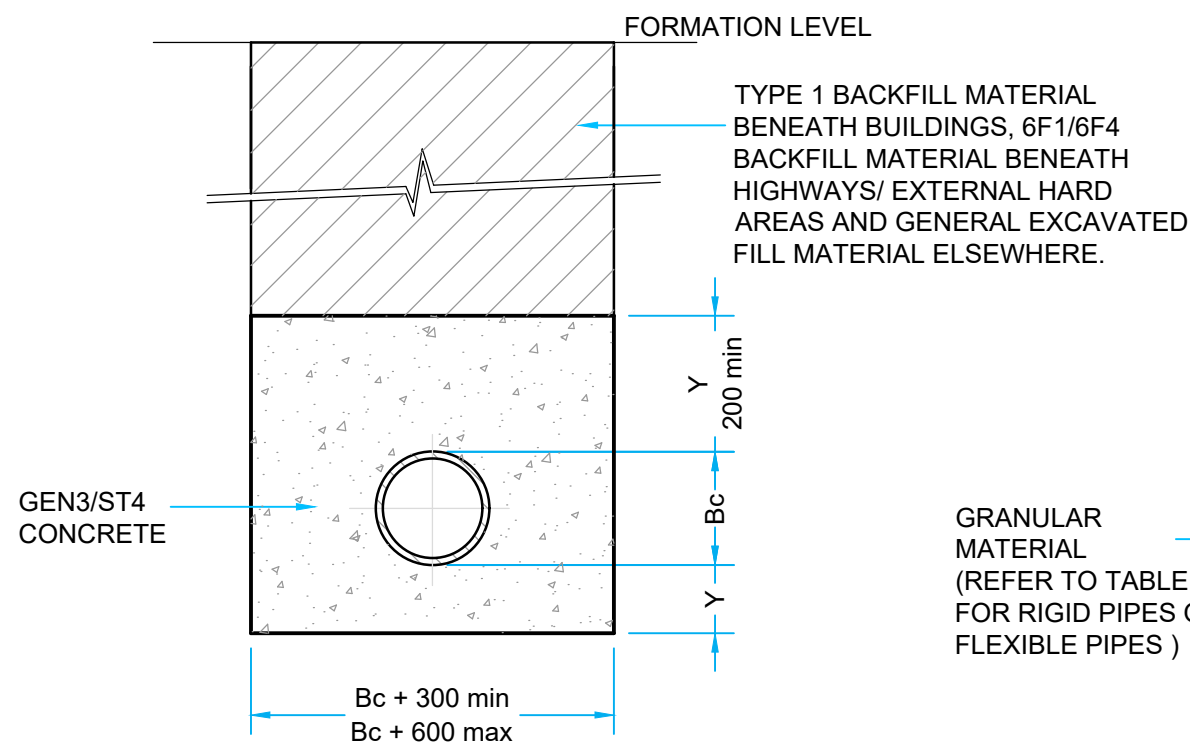
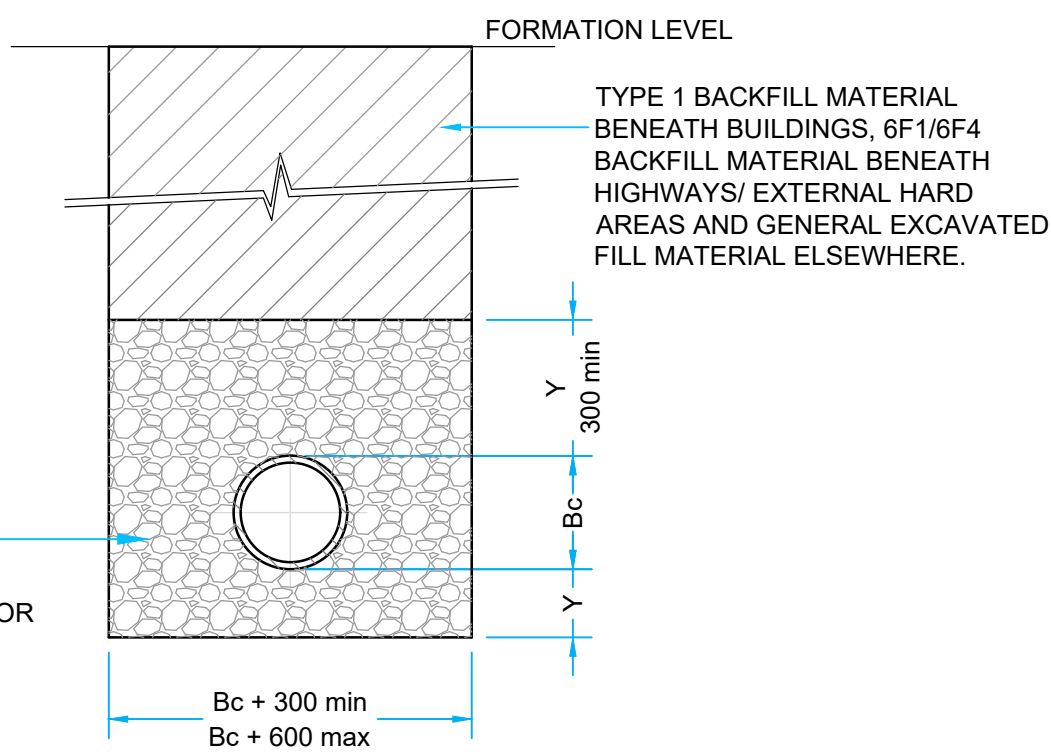




TO BE USED WHERE COVER TO PIPE IS:  
1. LESS THAN 1.2m IN TRAFFICKED AREAS  
2. LESS THAN 0.90m IN FIELDS  
3. LESS THAN 0.6m IN LANDSCAPED AREAS  
4. LESS THAN 0.3m BENEATH BUILDING SLABS

### CLASS Z BEDDING DETAIL

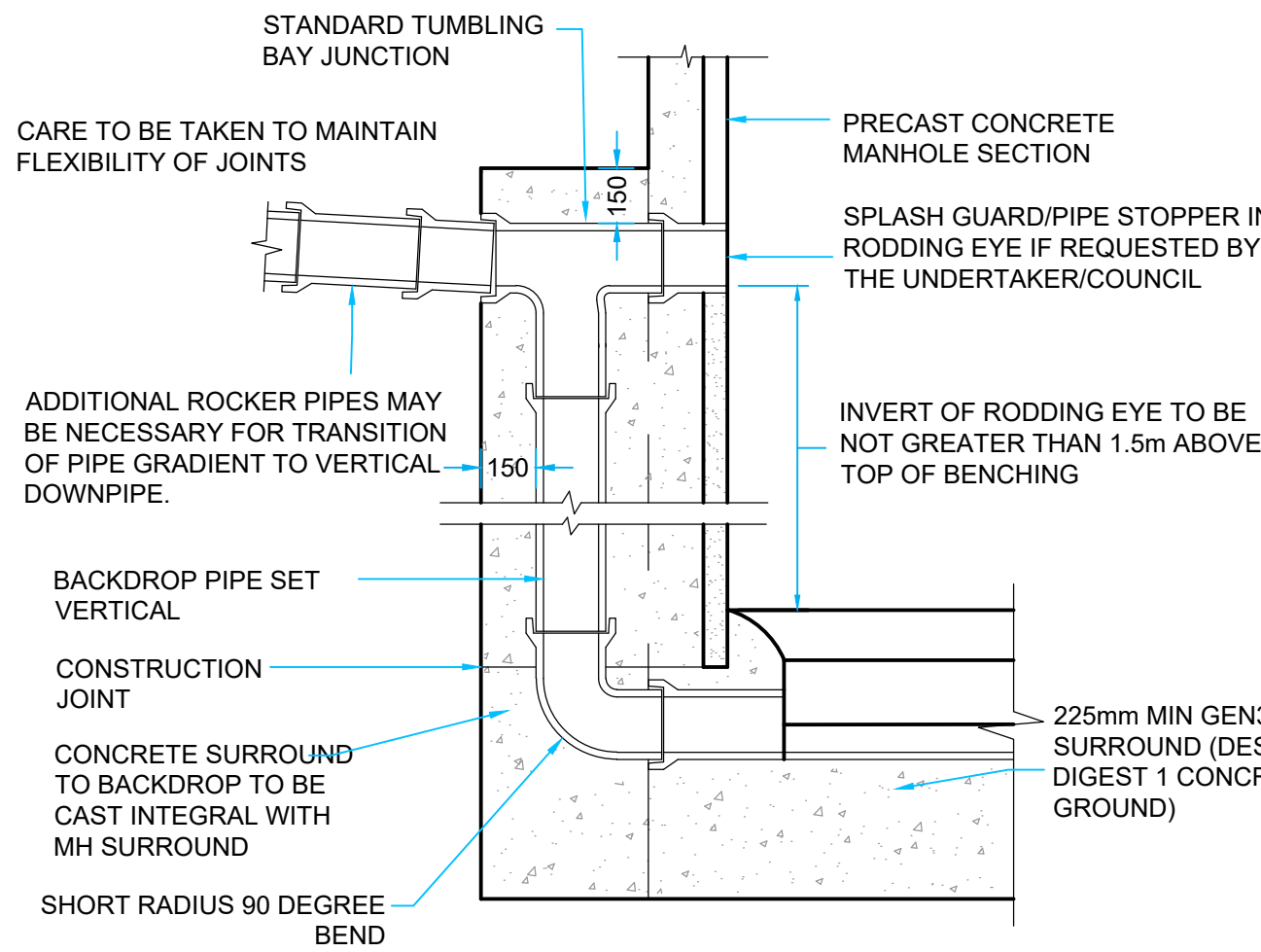
Y VALUE: HARD SPOTS/IRREGULAR TRENCH BOTTOM BC/4 (200mm MIN), EVEN TRENCH BOTTOM BC/6 (100mm MIN)  
BC = OUTSIDE PIPE DIAMETER



### CLASS S BEDDING DETAIL

Y VALUE: HARD SPOTS/IRREGULAR TRENCH BOTTOM BC/4 (200mm MIN), EVEN TRENCH BOTTOM BC/6 (100mm MIN).  
BC = OUTSIDE PIPE DIAMETER

| TRENCH WIDTHS |                      |
|---------------|----------------------|
| PIPE I.D      | OVERALL TRENCH WIDTH |
| 100           | 550                  |
| 150           | 600                  |
| 225           | 700                  |
| 300           | 850                  |
| 375           | 1050                 |
| 450           | 1150                 |
| 525           | 1200                 |
| 600           | 1350                 |
| 675           | 1450                 |
| 750           | 1500                 |
| 825           | 1600                 |
| 900           | 1900                 |
| 1050          | 2100                 |
| 1200          | 2300                 |
| 1350          | 2500                 |
| 1500          | 2700                 |
| 1800          | 3100                 |



### TYPICAL VERTICAL BACKDROP DETAIL

NOTE : WHERE THE DROP IS NOT EXCESSIVE A 45° DROP PIPE MAY BE USED

| SEWER DIAMETER (mm) | DROP SHAFT DIAMETER (mm) |
|---------------------|--------------------------|
| 225-300             | 225                      |
| 375                 | 300                      |
| 450                 | 375                      |
| 525-600             | 450                      |
| 675                 | 525                      |
| 750-900             | 600                      |

THE CONNECTION AT THE BOTTOM OF THE BACKDROP IS TO BE MADE AT SOFFIT LEVEL IN MANHOLES MAX. PIPE SIZE 825mm AND AT SPRINGING LEVEL IN MANHOLES PIPE SIZE 900 TO 1500mm

VERTICAL RODDING EYE MAY BE REQUIRED IN SITUATIONS WHERE BLOCKAGES ARE HIGH RISK. THE TUMBLING BAY SHALL BE BUILT INTO THE MANHOLE CHAMBER BELOW ANY REUCING SLAB

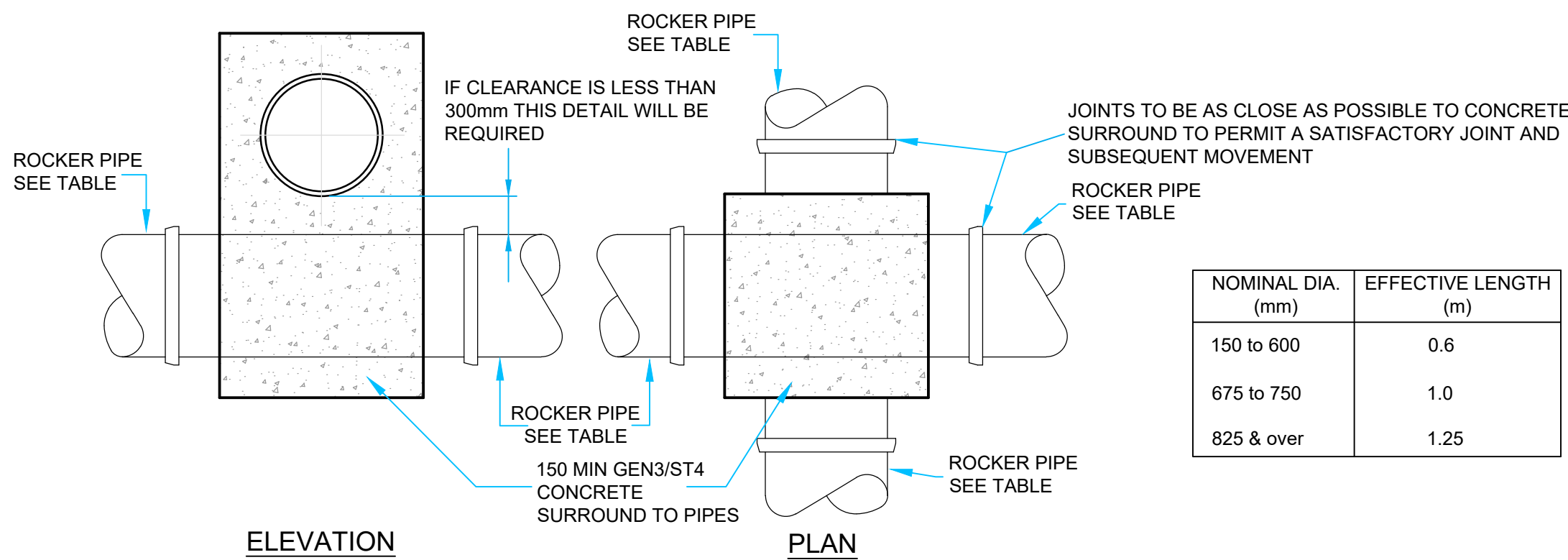
| BS EN 1610:1998 ANNEX B TABLE B.15<br>COARSE AGGREGATE - PIPE BEDDING |                                                        |          |          |          |                             |          |          |  |
|-----------------------------------------------------------------------|--------------------------------------------------------|----------|----------|----------|-----------------------------|----------|----------|--|
| SIEVE SIZE (mm)                                                       | PERCENTAGE BY MASS PASSING BS SIEVES FOR NOMINAL SIZES |          |          |          | SINGLE-SIZED AGGREGATE (mm) |          |          |  |
|                                                                       | GRADED AGGREGATE (mm)                                  | 20 to 5  | 14 to 5  | 40       | 20                          | 14       | 10       |  |
| 50.0                                                                  | 100                                                    | -----    | -----    | 100      | -----                       | -----    | -----    |  |
| 37.5                                                                  | 90 - 100                                               | 100      | -----    | 85 - 100 | 100                         | -----    | -----    |  |
| 20.0                                                                  | 35 - 70                                                | 90 - 100 | 100      | 0 - 25   | 85 - 100                    | 100      | -----    |  |
| 14.0                                                                  | -----                                                  | -----    | 90 - 100 | -----    | -----                       | 85 - 100 | 100      |  |
| 10.0                                                                  | 10 - 40                                                | 30 - 60  | 50 - 85  | 0 - 5    | 0 - 25                      | 0 - 50   | 85 - 100 |  |
| 5.0                                                                   | 0 - 5                                                  | 0 - 10   | 0 - 10   | -----    | 0 - 5                       | 0 - 10   | 0 - 25   |  |
| 2.36                                                                  | -----                                                  | -----    | -----    | -----    | -----                       | -----    | 0 - 5    |  |

### RIGID PIPES BEDDING GRADING

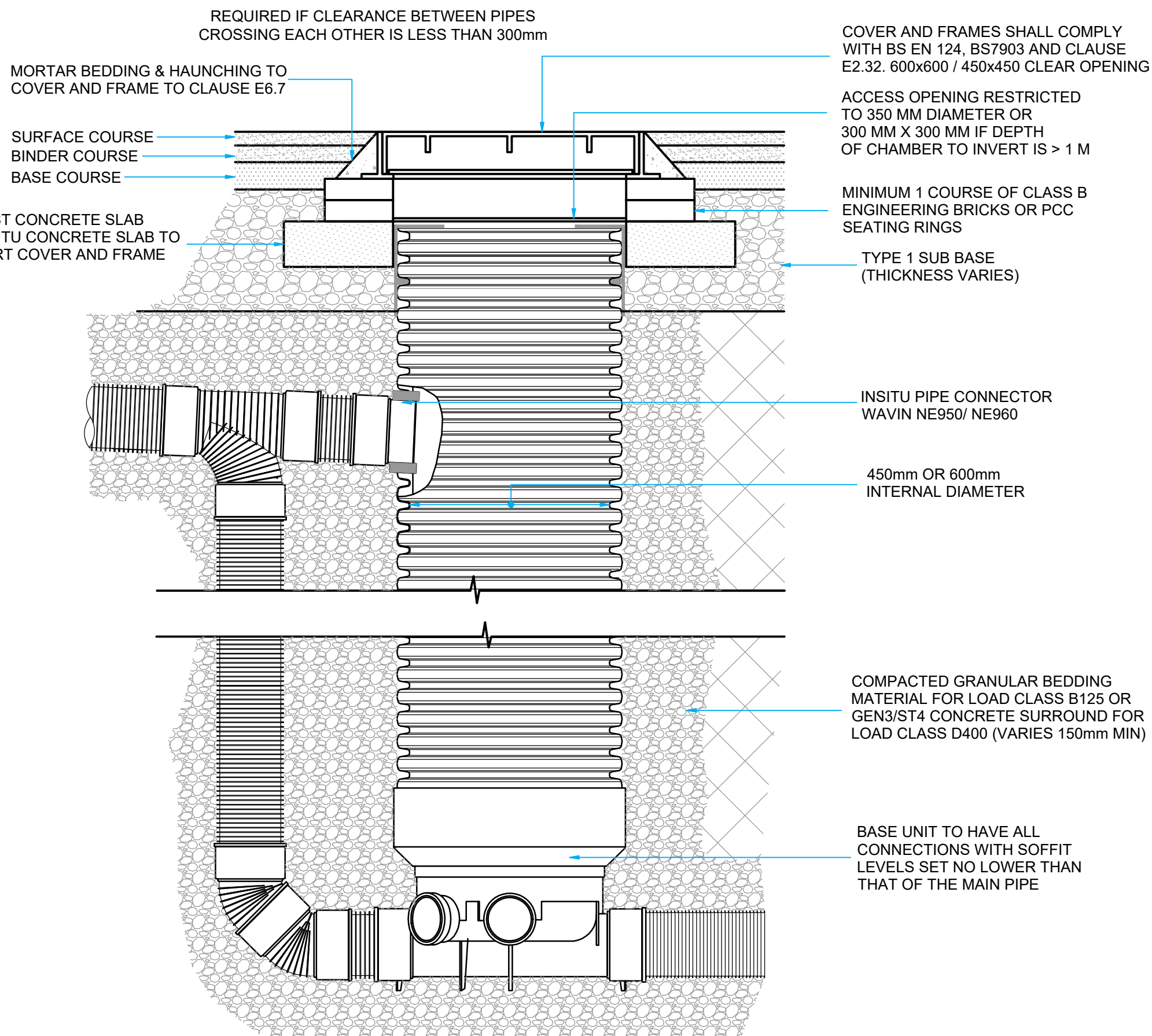
FOR RIGID PIPES THE BEDDING SHOULD BE SINGLE SIZE MATERIAL OR GRADED MATERIAL FROM 5mm UP TO A MAX SIZE OF 10mm FOR 100mm PIPES; 14mm FOR 150mm PIPES; 20mm FOR 225mm TO 600mm PIPES; 40mm FOR OVER 600mm PIPES

| BS EN 13242, COARSE AGGREGATE (CLAUSE 4.3.2) |                                                        |                            |
|----------------------------------------------|--------------------------------------------------------|----------------------------|
| CATEGORY FOR GENERAL GRADING REQUIREMENTS    | Gc80-20                                                |                            |
| CATEGORY FOR TOLERANCES AT MID-SIZE SIEVES   | GTnr (NO REQUIREMENTS)                                 |                            |
| CATEGORY PF MAXIMUM VALUES OF FINES CONTENTS | GRAVEL - F1.5<br>CRUSHED ROCK, RECYCLED AGGREGATE - F4 |                            |
| NOMINAL PIPE DIAMETER, mm                    | AGGREGATE SIZE, mm                                     |                            |
|                                              | GRADED                                                 | SINGLE SIZED               |
| NOT EXCEEDING 140                            | -                                                      | 4/10                       |
| EXCEEDING 140 BUT NOT EXCEEDING 400          | 2/14 or 4/20                                           | 4/10, 6/14 or 10/20        |
| EXCEEDING 400                                | 2/14, 4/20 or 4/40                                     | 4/10, 6/14, 10/20 or 20/40 |

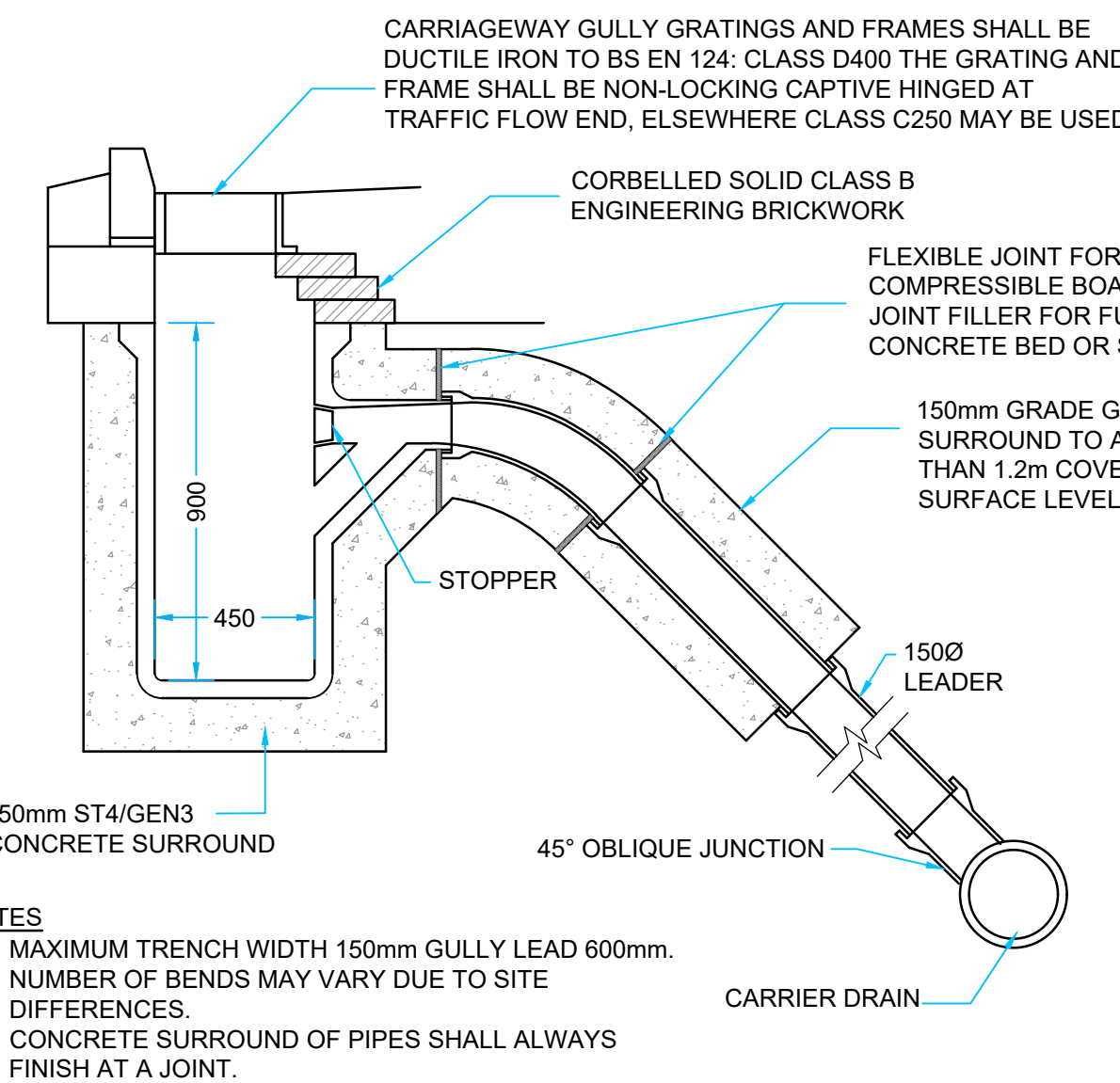
### FLEXIBLE PIPE BEDDING, HAUNCHING AND SURROUND MATERIAL



### SPECIAL PIPE CROSSOVER DETAIL



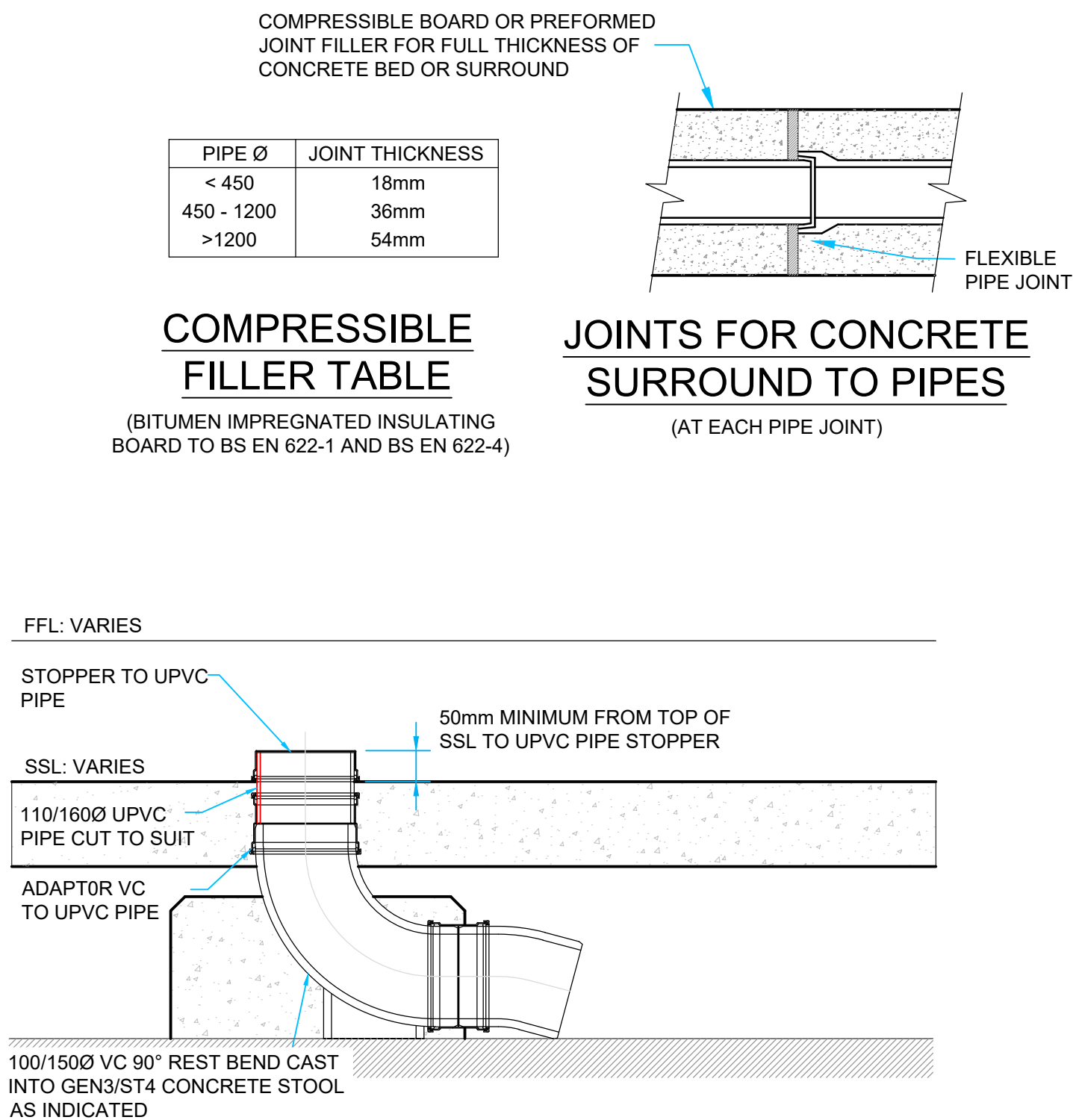
### INSPECTION CHAMBER BACKDROP DETAIL - TYPE D 450Ø & 600Ø (DEPTH TO SOFFIT 3m) D400 COVER SCALE - NTS



#### NOTES

1. MAXIMUM TRENCH WIDTH 150mm GULLY LEAD 600mm.
2. NUMBER OF BENDS MAY VARY DUE TO SITE DIFFERENCES.
3. CONCRETE SURROUND OF PIPES SHALL ALWAYS FINISH AT A JOINT.

### TYPICAL ROAD GULLY DETAIL



### COMPRESSIBLE FILLER TABLE

(BITUMEN IMPREGNATED INSULATING BOARD TO BS EN 622-1 AND BS EN 622-4)

| PIPE Ø     | JOINT THICKNESS |
|------------|-----------------|
| < 450      | 18mm            |
| 450 - 1200 | 36mm            |
| >1200      | 54mm            |

### JOINTS FOR CONCRETE SURROUND TO PIPES

(AT EACH PIPE JOINT)

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#### NOTES

1. DO NOT SCALE.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS.
3. SHOULD THERE BE ANY DISCREPANCY BETWEEN DETAILS INDICATED ON THIS DRAWING AND THOSE INDICATED ON OTHER DRAWINGS THE ENGINEER SHOULD BE INFORMED PRIOR TO CONSTRUCTION ON SITE.
4. ALL DIMENSIONS SHOWN ARE IN METRES UNLESS NOTED OTHERWISE.

|     |          |             |     |     |
|-----|----------|-------------|-----|-----|
| P01 | 22.11.24 | FIRST ISSUE | ARJ | JAS |
| REV | DATE     | DETAILS     | DRN | CHK |

### PRELIMINARY

### STAGE 4

|                |                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------|
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|----------------|----------------|-----------------------------------------------------------------------|
| DRAWN<br>ARJ   | DATE<br>NOV 24 | SCALES<br>AS SHOWN                                                    |
| CHECKED<br>FAW | DATE<br>NOV 24 | THE ABOVE SCALES APPLY<br>WHEN PLOTTED AT A1 SIZE<br>--DO NOT SCALE-- |
| APPRVD.<br>JAS | DATE<br>NOV 24 | EMAIL FOR DRAWINGS<br>info@roccoconsulting.com                        |

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| DRAWING TITLE<br><b>FW &amp; SW DRAINAGE<br/>CONSTRUCTION DETAILS<br/>SHEET 2</b> |                    |
| DRAWING No.<br><b>RDB/ROC/2B/XX/DR/C/83/0502</b>                                  | REV.<br><b>P01</b> |
| 4328                                                                              |                    |