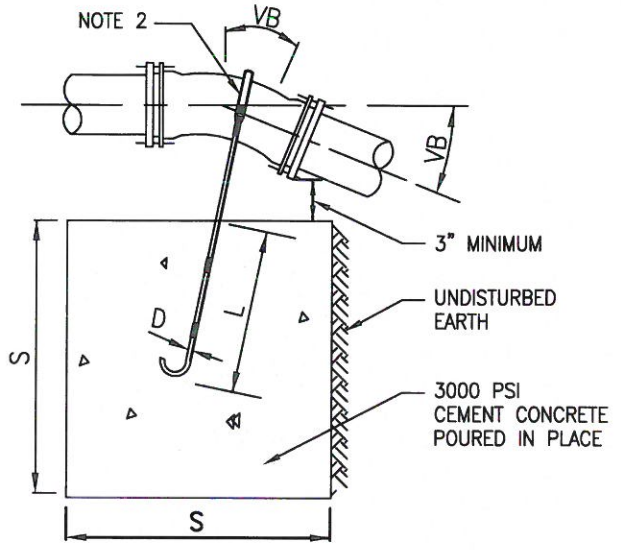
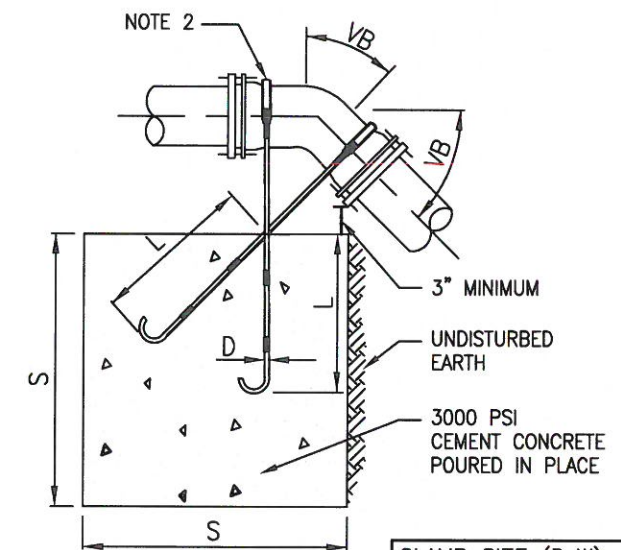


**TYPE "A" BLOCKING**  
FOR 11 1/4"-22 1/2"-33 3/4" VERTICAL BENDS

| PIPE SIZE NOM. DIAMETER- INCHES | DESIGN PRESSURE PSI | VB VERTICAL BEND DEGREES | No. OF CU. FT. OF CONC. BLOCKING | S SIDE OF CUBE LIN. FT. | D DIAM. OF THREADED RODS (2) SS INCHES | L DEPTH OF RODS IN CONCRETE LIN. FT. |        |
|---------------------------------|---------------------|--------------------------|----------------------------------|-------------------------|--|--------------------------------------|--------|
| 4"                              | 300                 | 11 1/4                   | 8                                | 2                       | 5/8"                                   | 1.5                                  |        |
|                                 |                     | 22 1/2                   | 11                               | 2.2                     |  | 2.0                                  |        |
|                                 |                     | 33 3/4                   | 17                               | 2.6                     |  |                                      |        |
| 6"                              | 300                 | 11 1/4                   | 11                               | 2.2                     | 5/8"                                   | 2.0                                  |        |
|                                 |                     | 22 1/2                   | 25                               | 2.9                     |  |                                      |        |
|                                 |                     | 33 3/4                   | 41                               | 3.5                     |  |                                      |        |
| 8"                              | 300                 | 11 1/4                   | 16                               | 2.5                     | 5/8"                                   | 2.0                                  |        |
|                                 |                     | 22 1/2                   | 47                               | 3.6                     |  |                                      |        |
|                                 |                     | 33 3/4                   | 70                               | 4.1                     |  | 3/4"                                 | 2.5    |
| 12"                             | 250                 | 11 1/4                   | 32                               | 3.2                     | 5/8"                                   | 2.0                                  |        |
|                                 |                     | 22 1/2                   | 88                               | 4.5                     |  | 7/8"                                 | 3.0    |
|                                 |                     | 33 3/4                   | 132                              | 5.1                     |  |                                      |        |
| 16"                             | 225                 | 11 1/4                   | 70                               | 4.1                     | 7/8"                                   | 3.0                                  |        |
|                                 |                     | 22 1/2                   | 184                              | 5.7                     |  |                                      | 1 1/8" |
|                                 |                     | 33 3/4                   | 275                              | 6.5                     |  | 1 1/4"                               |        |
| 20"                             | 200                 | 11 1/4                   | 91                               | 4.5                     | 7/8"                                   | 3.0                                  |        |
|                                 |                     | 22 1/2                   | 225                              | 6.1                     |  |                                      | 1 1/4" |
|                                 |                     | 33 3/4                   | 330                              | 6.9                     |  | 1 3/8"                               | 4.5    |
| 24"                             | 200                 | 11 1/4                   | 128                              | 5.0                     | 1"                                     | 3.5                                  |        |
|                                 |                     | 22 1/2                   | 320                              | 6.8                     |  |                                      | 1 3/8" |
|                                 |                     | 33 3/4                   | 480                              | 7.9                     |  | 1 7/8"                               | 5.5    |

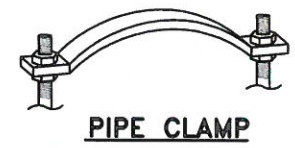


**TYPE "A" BLOCKING**



**TYPE "B" BLOCKING**

| CLAMP SIZE (DxW) |               |
|------------------|---------------|
| 4"               | 3/8" x 2"     |
| 6"               | 1/2" x 2-1/2" |
| 8"               | 1/2" x 2-1/2" |
| 12"              | 3/4" x 3"     |
| 16"              | 3/4" x 4"     |
| 20"              | 1" x 5"       |
| 24"              | 1" x 5"       |




**TYPE "B" BLOCKING**  
FOR - 45° VERTICAL BENDS

| PIPE SIZE | DESIGN PRESSURE | VB | No. OF CU. FT. OF CONC. BLOCKING | S   | D      | L   |
|-----------|-----------------|----|----------------------------------|-----|--------|-----|
| 4"        | 300             | 45 | 30                               | 3.1 | 5/8"   | 2.0 |
| 6"        |                 |    | 68                               | 4.1 |        |     |
| 8"        |                 |    | 123                              | 5.0 |        |     |
| 12"       | 250             | 45 | 232                              | 6.1 | 3/4"   | 2.5 |
| 16"       |                 |    | 478                              | 7.8 | 1 1/8" | 4.0 |
| 20"       | 200             | 45 | 560                              | 8.2 | 1 1/4" | 4.5 |
| 24"       |                 |    | 820                              | 9.4 | 1 3/8" |     |

**NOTES:**

1. APPROVAL OF LOCATION FROM THE DISTRICT IS REQUIRED PRIOR TO INSTALLATION.
2. PIPE CLAMP SHALL BE GALVANIZED. BAR AND HARDWARE SHALL BE STAINLESS STEEL.



**ALDERWOOD**  
WATER & WASTEWATER DISTRICT

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**THRUST BLOCKING FOR VERTICAL BENDS**

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|                              |            |
|------------------------------|------------|
| DATE: 11-2015                | DWG. WD-12 |
| APPROVED BY: _____ DLH _____ |            |
| DISTRICT ENGINEER            |            |