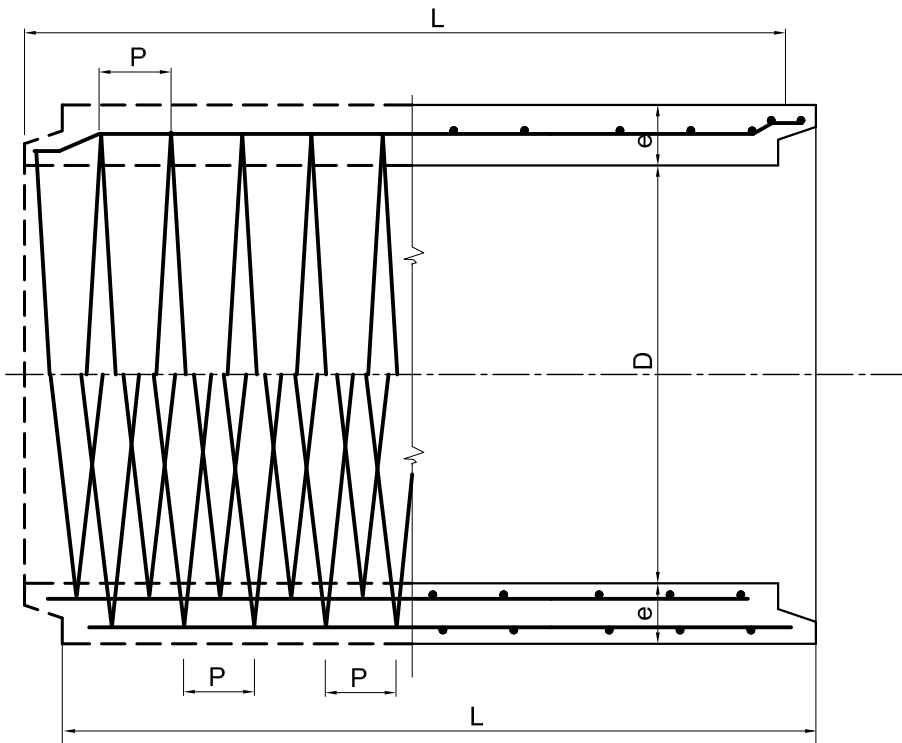
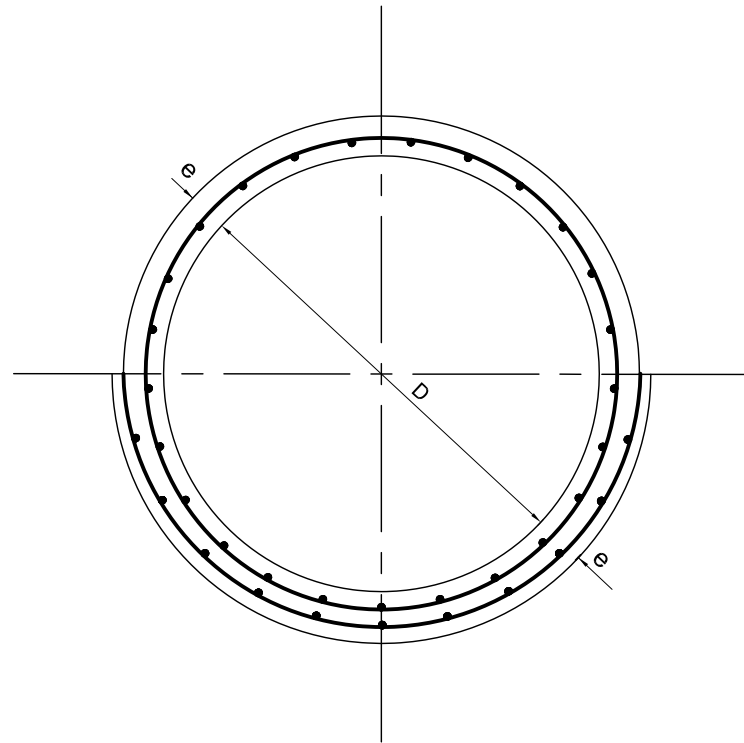


| RESISTENCIA A LA COMPRESION DE LAS PROBEITAS EN 28 DIAS. | CLASE   | CAÑOS TIPO A y CAÑOS TIPO B     |                                     |                     |                                                           |      |    |          |     |      |           |      |                     |                     |              | DETALLE DE JUNTAS |              |       |       |       |              |       |              |       |       |       |              |   |   |  |  |  |  |  |
|----------------------------------------------------------|---------|---------------------------------|-------------------------------------|---------------------|-----------------------------------------------------------|------|----|----------|-----|------|-----------|------|---------------------|---------------------|--------------|-------------------|--------------|-------|-------|-------|--------------|-------|--------------|-------|-------|-------|--------------|---|---|--|--|--|--|--|
|                                                          |         | DIAMETRO DEL CAÑO               | ESPESOR MINIMO DE LA PARED DEL CAÑO | LARGO UTIL DEL CAÑO | ARMADURA (acero aleado torsionado $\sigma_s=2400$ Kg/cm2) |      |    |          |     |      |           |      | PESO DE LA ARMADURA | VOLUMEN DE HORMIGON | CAÑOS TIPO A |                   |              |       |       |       |              |       |              |       |       |       | CAÑOS TIPO B |   |   |  |  |  |  |  |
|                                                          |         |                                 |                                     |                     | LONGITUDINAL                                              |      |    |          |     |      | ESPIRALES |      |                     |                     | CAÑOS TIPO A |                   |              |       |       |       | CAÑOS TIPO B |       |              |       |       |       |              |   |   |  |  |  |  |  |
|                                                          |         |                                 |                                     |                     | SEPARACION EN cm.                                         |      |    |          |     |      | INTERNA   |      |                     |                     | EXTERNA      |                   | CAÑOS TIPO A |       |       |       |              |       | CAÑOS TIPO B |       |       |       |              |   |   |  |  |  |  |  |
|                                                          |         |                                 |                                     |                     |                                                           |      |    |          |     |      | DIAMETRO  | PASO |                     |                     | DIAMETRO     | PASO              |              |       |       |       |              |       |              |       |       |       |              |   |   |  |  |  |  |  |
|                                                          |         |                                 |                                     |                     | D                                                         | e    | L  | INTERIOR |     |      | EXTERIOR  |      |                     |                     | Ø            | P                 | Ø            | P     | a     | b     | c            | d     | A            | B     | C     | F     | G            | H | J |  |  |  |  |  |
| m                                                        | m       | m                               | Ø 8                                 | Ø 10                | Ø 8                                                       | Ø 10 | mm | cm.      | mm. | cm.  | Kg.       | m3   | m.                  | m.                  | m.           | m.                | m.           | m.    | m.    | m.    | m.           | m.    | m.           | m.    |       |       |              |   |   |  |  |  |  |  |
| 280 Kg/cm2                                               | I (*)   | SOLAMENTE PARA ACCESOS LABIALES | 0.60                                | 0.065               | 1.00                                                      | 10   | -  | -        | -   | 6    | 10.0      | -    | -                   | 9.18                | 0.136        | 0.027             | 0.015        | 0.023 | 0.040 | 0.880 | 0.760        | 0.070 | 0.085        | 0.075 | 0.060 | 0.005 |              |   |   |  |  |  |  |  |
|                                                          |         | 0.70                            | 0.085                               | 1.00                | 10                                                        | -    | -  | -        | 6   | 10.0 | -         | -    | 10.89               | 0.209               | 0.035        | 0.019             | 0.031        | 0.050 | 1.060 | 0.900 | 0.090        | 0.090 | 0.095        | 0.065 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 0.80                            | 0.095                               | 1.00                | 10                                                        | -    | -  | -        | 6   | 8.5  | -         | -    | 13.39               | 0.267               | 0.040        | 0.021             | 0.034        | 0.055 | 1.200 | 1.020 | 0.100        | 0.100 | 0.105        | 0.065 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 0.90                            | 0.105                               | 1.00                | 10                                                        | -    | 10 | -        | 6   | 9.5  | 6         | 10.0 | 29.05               | 0.332               | 0.044        | 0.023             | 0.038        | 0.060 | 1.240 | 1.090 | 0.085        | 0.110 | 0.090        | 0.070 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.00                            | 0.105                               | 1.00                | 10                                                        | -    | 10 | -        | 6   | 10.0 | 6         | 10.0 | 44.62               | 0.365               | 0.043        | 0.022             | 0.040        | 0.060 | 1.400 | 1.240 | 0.105        | 0.115 | 0.115        | 0.075 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.10                            | 0.115                               | 1.00                | 10                                                        | -    | 10 | -        | 6   | 8.5  | 6         | 11.0 | 36.00               | 0.439               | 0.048        | 0.025             | 0.042        | 0.070 | 1.570 | 1.350 | 0.120        | 0.120 | 0.125        | 0.075 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.20                            | 0.130                               | 1.00                | -                                                         | 20   | 10 | -        | 8   | 12.7 | 6         | 9.5  | 47.24               | 0.543               | 0.055        | 0.028             | 0.047        | 0.080 | 1.740 | 1.490 | 0.135        | 0.125 | 0.140        | 0.080 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.40                            | 0.140                               | 1.00                | -                                                         | 20   | 10 | -        | 8   | 10.5 | 6         | 8.0  | 59.90               | 0.677               | 0.059        | 0.031             | 0.050        | 0.085 | 1.980 | 1.710 | 0.145        | 0.130 | 0.150        | 0.085 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.60                            | 0.155                               | 1.00                | -                                                         | 20   | -  | 20       | 8   | 9.5  | 8         | 12.5 | 78.99               | 0.854               | 0.065        | 0.034             | 0.056        | 0.095 | 2.240 | 1.940 | 0.160        | 0.135 | 0.165        | 0.090 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 0.80                            | 0.080                               | 1.00                | 10                                                        | -    | -  | -        | 6   | 9.5  | -         | -    | 9.71                | 0.171               | 0.034        | 0.017             | 0.029        | 0.050 | 0.950 | 0.790 | 0.087        | 0.095 | 0.090        | 0.070 | 0.005 |       |              |   |   |  |  |  |  |  |
| 280 Kg/cm2                                               | II (*)  | 0.70                            | 0.085                               | 1.00                | 10                                                        | -    | -  | -        | 6   | 8.0  | -         | -    | 12.24               | 0.209               | 0.036        | 0.018             | 0.031        | 0.050 | 1.060 | 0.900 | 0.092        | 0.095 | 0.095        | 0.070 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 0.80                            | 0.095                               | 1.00                | 10                                                        | -    | -  | -        | 8   | 10.0 | -         | -    | 18.18               | 0.267               | 0.040        | 0.021             | 0.034        | 0.055 | 1.200 | 1.020 | 0.101        | 0.110 | 0.105        | 0.075 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 0.90                            | 0.105                               | 1.00                | 10                                                        | -    | 10 | -        | 6   | 8.0  | 6         | 10.0 | 30.97               | 0.331               | 0.044        | 0.023             | 0.036        | 0.065 | 1.340 | 1.140 | 0.111        | 0.125 | 0.115        | 0.085 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.00                            | 0.115                               | 1.00                | -                                                         | 20   | 10 | -        | 8   | 10.0 | 6         | 9.0  | 49.00               | 0.403               | 0.047        | 0.026             | 0.042        | 0.067 | 1.470 | 1.260 | 0.116        | 0.128 | 0.120        | 0.085 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.10                            | 0.115                               | 1.00                | -                                                         | 20   | 10 | -        | 8   | 11.0 | 6         | 8.0  | 47.12               | 0.439               | 0.048        | 0.025             | 0.042        | 0.070 | 1.580 | 1.360 | 0.121        | 0.130 | 0.125        | 0.085 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.20                            | 0.130                               | 1.00                | -                                                         | 20   | -  | 20       | 8   | 9.5  | 8         | 12.7 | 59.81               | 0.543               | 0.055        | 0.028             | 0.047        | 0.080 | 1.740 | 1.490 | 0.135        | 0.130 | 0.140        | 0.085 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.40                            | 0.140                               | 1.00                | -                                                         | 20   | -  | 20       | 10  | 12.5 | 8         | 10.5 | 77.41               | 0.677               | 0.059        | 0.031             | 0.050        | 0.085 | 1.980 | 1.710 | 0.145        | 0.135 | 0.150        | 0.090 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.60                            | 0.155                               | 1.00                | -                                                         | 20   | -  | 20       | 10  | 10.5 | 10        | 14.0 | 97.96               | 0.854               | 0.065        | 0.034             | 0.056        | 0.093 | 2.240 | 1.940 | 0.159        | 0.140 | 0.165        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 280 Kg/cm2                      | III (*)                             | 0.60                | 0.095                                                     | 1.00 | 10 | -        | 10  | -    | 6         | 10.0 | 6                   | 10.0                | 19.50        | 0.207             | 0.040        | 0.021 | 0.034 | 0.060 | 1.000        | 0.820 | 0.097        | 0.105 | 0.100 | 0.080 | 0.005        |   |   |  |  |  |  |  |
|                                                          |         |                                 |                                     | 0.70                | 0.105                                                     | 1.00 | 10 | -        | 10  | -    | 6         | 10.2 | 6                   | 10.2                | 22.08        | 0.265             | 0.044        | 0.023 | 0.038 | 0.065 | 1.140        | 1.004 | 0.106        | 0.110 | 0.110 | 0.085 | 0.005        |   |   |  |  |  |  |  |
| 0.80                                                     | 0.115   |                                 |                                     | 1.00                | 10                                                        | -    | 10 | -        | 6   | 11.4 | 6         | 11.4 | 23.84               | 0.330               | 0.048        | 0.025             | 0.042        | 0.070 | 1.280 | 1.060 | 0.116        | 0.125 | 0.120        | 0.090 | 0.005 |       |              |   |   |  |  |  |  |  |
| 0.90                                                     | 0.125   |                                 |                                     | 1.00                | 10                                                        | -    | 10 | -        | 6   | 9.5  | 6         | 12.1 | 29.09               | 0.402               | 0.053        | 0.028             | 0.045        | 0.075 | 1.420 | 1.180 | 0.125        | 0.135 | 0.130        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
| 1.00                                                     | 0.130   |                                 |                                     | 1.00                | 10                                                        | -    | 10 | -        | 8   | 11.5 | 6         | 9.5  | 50.90               | 0.462               | 0.055        | 0.029             | 0.046        | 0.078 | 1.540 | 1.290 | 0.130        | 0.138 | 0.135        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
| 1.10                                                     | 0.135   |                                 |                                     | 1.00                | -                                                         | 20   | 10 | -        | 8   | 11.5 | 6         | 8.5  | 46.68               | 0.523               | 0.057        | 0.030             | 0.048        | 0.081 | 1.660 | 1.400 | 0.135        | 0.140 | 0.140        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
| 1.20                                                     | 0.150   |                                 |                                     | 1.00                | -                                                         | 20   | -  | 20       | 10  | 14.0 | 8         | 11.5 | 64.11               | 0.636               | 0.063        | 0.033             | 0.054        | 0.090 | 1.820 | 1.530 | 0.155        | 0.140 | 0.160        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
| 1.40                                                     | 0.160   |                                 |                                     | 1.00                | -                                                         | 20   | -  | 20       | 10  | 10.5 | 10        | 14.0 | 87.19               | 0.784               | 0.067        | 0.035             | 0.058        | 0.095 | 2.020 | 1.730 | 0.155        | 0.150 | 0.160        | 0.105 | 0.005 |       |              |   |   |  |  |  |  |  |
| 0.60                                                     | 0.095   |                                 |                                     | 1.00                | 10                                                        | -    | 10 | -        | 6   | 10.0 | 6         | 10.0 | 19.50               | 0.207               | 0.040        | 0.021             | 0.034        | 0.060 | 1.000 | 0.820 | 0.097        | 0.105 | 0.100        | 0.080 | 0.005 |       |              |   |   |  |  |  |  |  |
| 0.70                                                     | 0.105   |                                 |                                     | 1.00                | 10                                                        | -    | 10 | -        | 6   | 9.5  | 6         | 10.2 | 22.46               | 0.265               | 0.044        | 0.023             | 0.038        | 0.065 | 1.140 | 0.940 | 0.106        | 0.110 | 0.110        | 0.085 | 0.005 |       |              |   |   |  |  |  |  |  |
| 420 Kg/cm2                                               | IV (**) | 0.80                            | 0.115                               | 1.00                | -                                                         | 20   | 10 | -        | 8   | 10.0 | 6         | 8.0  | 34.68               | 0.330               | 0.048        | 0.025             | 0.042        | 0.070 | 1.280 | 1.060 | 0.116        | 0.125 | 0.120        | 0.090 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 0.90                            | 0.125                               | 1.00                | -                                                         | 20   | -  | 20       | 8   | 8.5  | 8         | 11.5 | 49.03               | 0.402               | 0.053        | 0.028             | 0.045        | 0.075 | 1.420 | 1.180 | 0.126        | 0.135 | 0.130        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.00                            | 0.135                               | 1.00                | -                                                         | 20   | -  | 20       | 10  | 11.0 | 8         | 12.5 | 55.88               | 0.482               | 0.057        | 0.030             | 0.048        | 0.078 | 1.550 | 1.300 | 0.130        | 0.138 | 0.135        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.10                            | 0.135                               | 1.00                | -                                                         | 20   | -  | 20       | 10  | 10.0 | 10        | 13.3 | 71.32               | 0.523               | 0.057        | 0.030             | 0.048        | 0.081 | 1.660 | 1.400 | 0.135        | 0.140 | 0.140        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.20                            | 0.150                               | 1.00                | -                                                         | 20   | -  | 20       | 12  | 11.0 | 10        | 10.5 | 91.59               | 0.636               | 0.063        | 0.033             | 0.054        | 0.090 | 1.820 | 1.530 | 0.155        | 0.140 | 0.160        | 0.095 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.40                            | 0.160                               | 1.00                | -                                                         | 20   | -  | 20       | 12  | 9.0  | 12        | 12.0 | 123.85              | 0.784               | 0.067        | 0.035             | 0.058        | 0.095 | 2.050 | 1.740 | 0.164        | 0.155 | 0.170        | 0.110 | 0.005 |       |              |   |   |  |  |  |  |  |
|                                                          |         | 1.60                            | 0.175                               | 1.00                | -                                                         | 20   | -  | 20       | 12  | 7.5  | 12        | 10.0 | 162.72              | 0.975               | 0.074        | 0.038             | 0.063        | 0.105 | 2.300 | 1.960 | 0.164        | 0.165 | 0.170        | 0.120 | 0.005 |       |              |   |   |  |  |  |  |  |

## CAÑO TIPO A



| TAPADA MINIMA EN EL EJE |                                                                 |
|-------------------------|-----------------------------------------------------------------|
| BAJO PAVIMENTO FLEXIBLE | MINIMA 0.60 m.                                                  |
| BAJO PAVIMENTO RIGIDO   | D - 0.60 a 0.90 mínimo 0.35 m.<br>D -1.00 a 1.60 mínimo 0.40 m. |

## DETERMINACION DE LA CLASE DE CAÑO PARA CADA DIAMETRO EN FUNCION DE LA TAPADA.

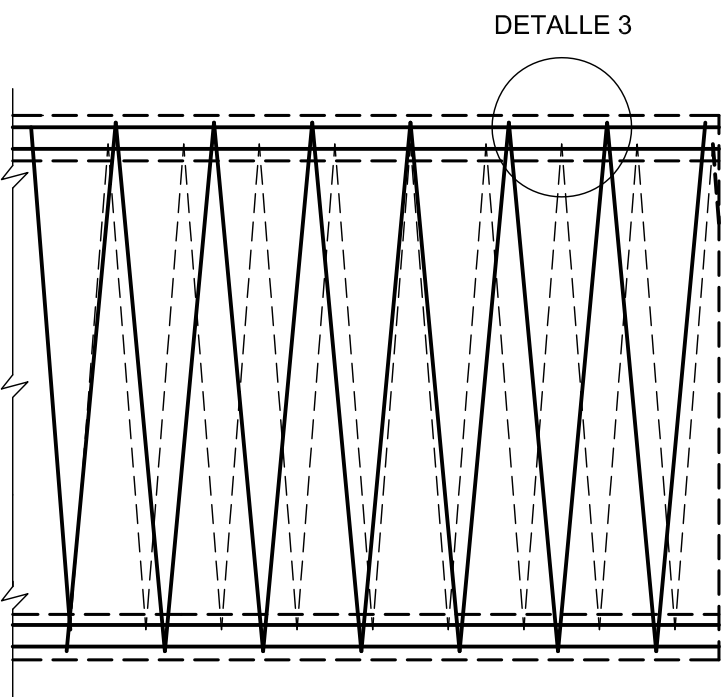
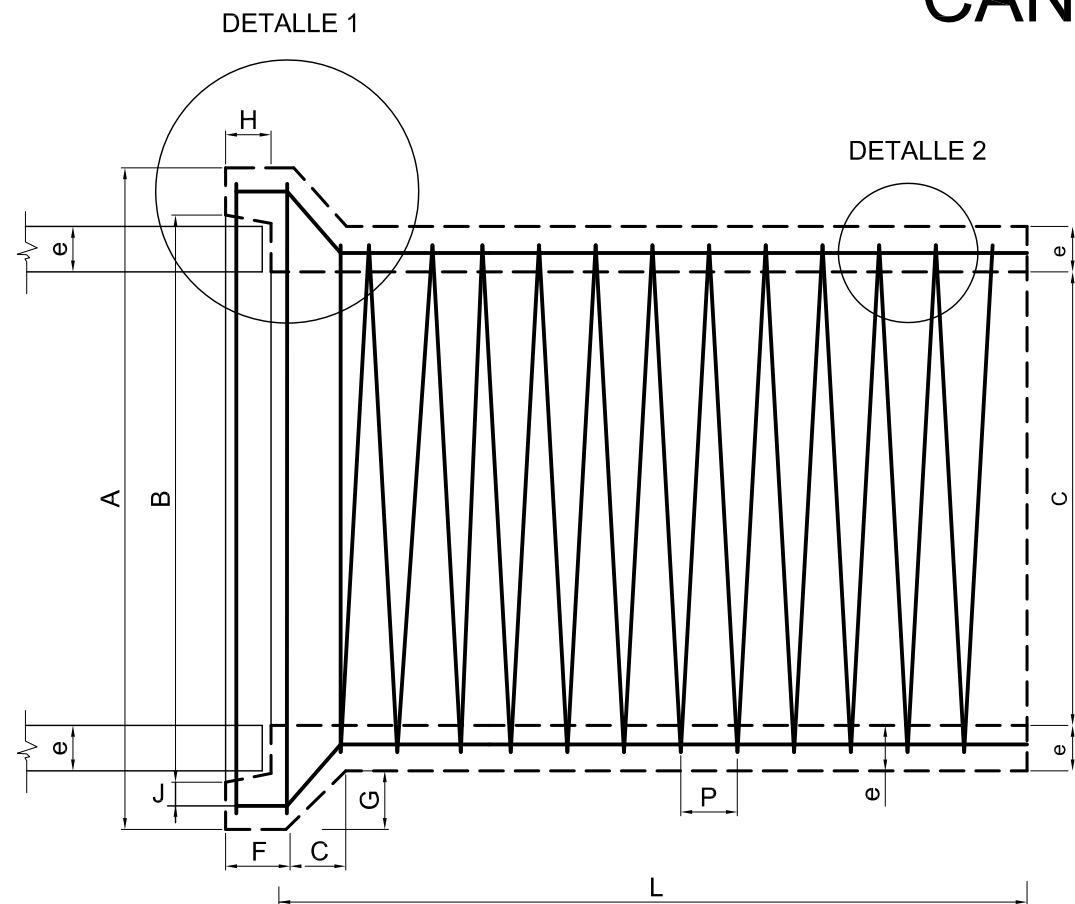
| D CAÑO (m)  | CLASE I ACCESOS          | CLASE II | CLASE III | CLASE IV |
|-------------|--------------------------|----------|-----------|----------|
|             | TAPADA MAXIMA EN METROS. |          |           |          |
| 0.60 - 0.70 | 5.80                     | 7.30     | 10.00     | 14.30    |
| 0.80 - 0.90 | 5.80                     | 7.60     | 10.40     | 15.00    |
| 1.00        | 5.80                     | 7.60     | 10.50     | 15.10    |
| 1.10 - 1.20 | 5.80                     | 7.60     | 10.70     | 15.20    |
| 1.40 - 1.60 | 6.10                     | 7.60     | 10.70     | 15.50    |

NOTA: - EL DISEÑO HIDRÁULICO SE EFECTUARÁ PARA CADA CASO EN PARTICULAR.

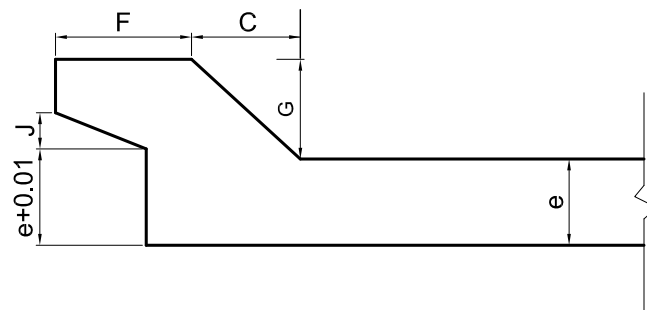
REEMPLAZA AL PLANO TIPO N° 3488 - BIS 2 - D.P.V.

|                                                                               |                                  |                                   |
|-------------------------------------------------------------------------------|----------------------------------|-----------------------------------|
|                                                                               | PROVINCIA DE SANTA FE            |                                   |
|                                                                               | DIRECCIÓN PROVINCIAL DE VIALIDAD |                                   |
|                                                                               |                                  | DIRECCIÓN DE ESTUDIOS Y PROYECTOS |
| PLANO TIPO                                                                    |                                  |                                   |
|                                                                               |                                  |                                   |
| CARACTERÍSTICAS DE LOS CAÑOS DE HORMIGÓN ARMADO PARA ALCANTARILLAS Y DESAGÜES |                                  |                                   |
| FECHA:<br>ABRIL DE 2007                                                       |                                  | DIRECTOR:<br>ING. O. CONTURSI     |
|                                                                               |                                  | PLANO N°:<br>8508                 |
|                                                                               |                                  | ESCALA:                           |
|                                                                               |                                  | PROYECTISTA:<br>D.N.V.            |
|                                                                               |                                  | MODIFICACIONES:<br>D.P.V.         |
|                                                                               |                                  | DIBUJO:                           |

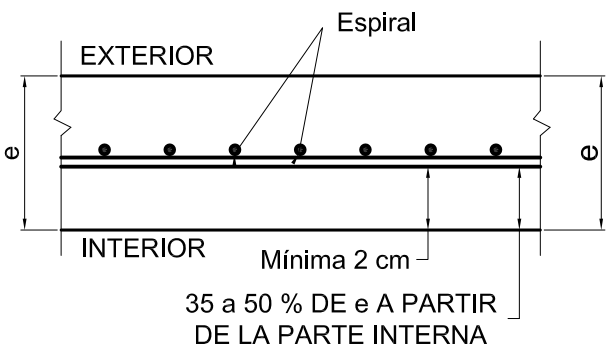
## CAÑO TIPO B



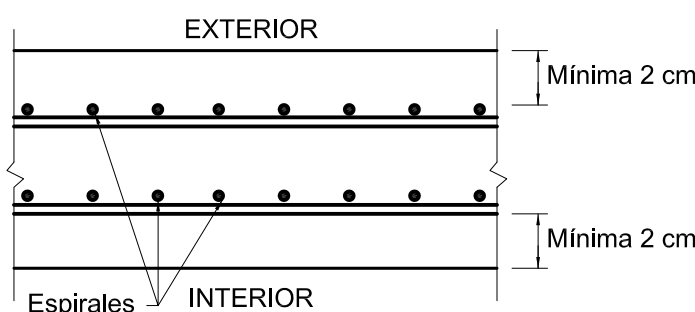
## DETALLE 1



## DETALLE 2



## DETALLE 3



## DETALLE DE JUNTAS

