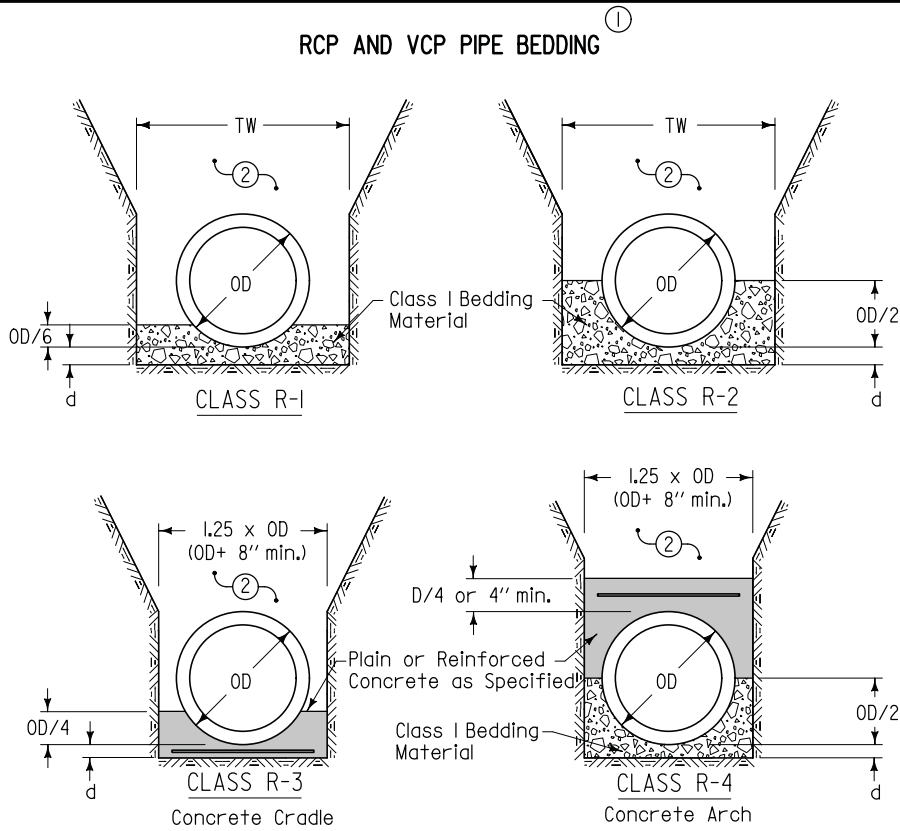


RCP AND VCP PIPE BEDDING



Refer to sheet 2 for bury depth restrictions.

- ① Use Bedding Class R-1 or R-2 unless specified otherwise.
- ② Place remainder of bedding and backfill materials as specified in the contract documents.

Key

- OD = Outside diameter of pipe
- OS = Outside span of pipe
- TW = Trench width at top of pipe:
Min. = OD+18 inches
Max. = 1.25xOD+12 inches OR
54 inches (whichever is greater)
- d = Depth of bedding material below pipe:
OD/8 or OS/8, OR 4 inches
(whichever is greater)

REINFORCED CONCRETE ARCH PIPE BEDDING

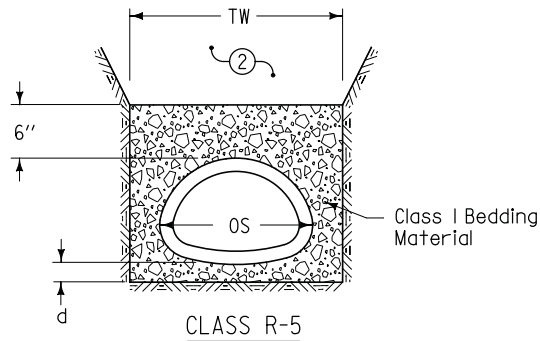


FIGURE 3010.102 SHEET 1 OF 2

| | | |
|--|---------------------------|-------------------------|
| | | REVISION |
| | | NEW 04-21-09 |
| FIGURE 3010.102 | STANDARD ROAD PLAN | SW-102 |
| | | SHEET 1 of 2 |
| REVISIONS: New. Replaces SUDAS Figures 3010.3, 3010.7, and 3010.8. | | |
| | | |
| SUDAS DIRECTOR | | DESIGN METHODS ENGINEER |
| RIGID GRAVITY PIPE TRENCH BEDDING | | |

ALLOWABLE BURY DEPTH

CLASS III RCP

| Pipe Diameter (inches) | Class R-1 Bedding | Class R-2 Bedding | Class R-3 & R-4 Bedding | | |
|------------------------|-------------------|-------------------|-------------------------|---------|---------|
| | | | No Steel | As=0.4% | As=1.0% |
| 12 | 7' | 10' | 15' | 19' | 27' |
| 15 | 8' | 10' | 16' | 19' | 27' |
| 18 | 8' | 11' | 16' | 20' | 40' |
| 21 | 8' | 11' | 18' | 26' | 40' |
| 24 | 8' | 12' | 23' | 36' | 40' |
| 27 | 10' | 15' | 30' | 40' | 40' |
| 30 | 11' | 15' | 29' | 40' | 40' |
| 33 | 11' | 15' | 28' | 40' | 40' |
| 36 | 11' | 15' | 27' | 40' | 40' |
| 42 | 11' | 15' | 26' | 38' | 40' |
| 48 | 11' | 15' | 26' | 36' | 40' |
| 54 | 11' | 15' | 25' | 34' | 40' |
| 60 | 11' | 15' | 25' | 33' | 40' |
| 66 | 11' | 15' | 24' | 32' | 40' |
| 72 | 11' | 15' | 24' | 32' | 40' |

As = Area of Steel Reinforcing

CLASS IV RCP

| Pipe Diameter (inches) | Class R-1 Bedding | Class R-2 Bedding | Class R-3 & R-4 Bedding | | |
|------------------------|-------------------|-------------------|-------------------------|---------|---------|
| | | | No Steel | As=0.4% | As=1.0% |
| 12 | 12' | 15' | 23' | 28' | 40' |
| 15 | 12' | 16' | 23' | 30' | 40' |
| 18 | 13' | 16' | 29' | 40' | 40' |
| 21 | 13' | 18' | 40' | 40' | 40' |
| 24 | 16' | 23' | 40' | 40' | 40' |
| 27 | 19' | 30' | 40' | 40' | 40' |
| 30 | 19' | 29' | 40' | 40' | 40' |
| 33 | 19' | 28' | 40' | 40' | 40' |
| 36 | 19' | 28' | 40' | 40' | 40' |
| 42 | 18' | 27' | 40' | 40' | 40' |
| 48 | 18' | 26' | 40' | 40' | 40' |
| 54 | 18' | 25' | 40' | 40' | 40' |
| 60 | 18' | 25' | 40' | 40' | 40' |
| 66 | 18' | 25' | 40' | 40' | 40' |
| 72 | 18' | 24' | 40' | 40' | 40' |

As = Area of Steel Reinforcing

CLASS V RCP

| Pipe Diameter (inches) | Class R-1 Bedding | Class R-2 Bedding | Class R-3 & R-4 Bedding | | |
|------------------------|-------------------|-------------------|-------------------------|---------|---------|
| | | | No Steel | As=0.4% | As=1.0% |
| 12 | 18' | 23' | 35' | 40' | 40' |
| 15 | 19' | 24' | 40' | 40' | 40' |
| 18 | 19' | 30' | 40' | 40' | 40' |
| 21 | 25' | 40' | 40' | 40' | 40' |
| 24 | 34' | 40' | 40' | 40' | 40' |
| 27 | 40' | 40' | 40' | 40' | 40' |
| 30 | 40' | 40' | 40' | 40' | 40' |
| 33 | 40' | 40' | 40' | 40' | 40' |
| 36 | 40' | 40' | 40' | 40' | 40' |
| 42 | 37' | 40' | 40' | 40' | 40' |
| 48 | 35' | 40' | 40' | 40' | 40' |
| 54 | 33' | 40' | 40' | 40' | 40' |
| 60 | 32' | 40' | 40' | 40' | 40' |
| 66 | 31' | 40' | 40' | 40' | 40' |
| 72 | 31' | 40' | 40' | 40' | 40' |

As = Area of Steel Reinforcing

EXTRA STRENGTH VCP

| Pipe Diameter (Inches) | Class R-1 Bedding | Class R-2 Bedding | Class R-3 & R-4 Bedding | | |
|------------------------|-------------------|-------------------|-------------------------|---------|---------|
| | | | No Steel | As=0.4% | As=1.0% |
| 6 | 25' | 30' | 30' | 30' | 30' |
| 8 | 20' | 26' | 30' | 30' | 30' |
| 10 | 18' | 23' | 30' | 30' | 30' |
| 12 | 16' | 20' | 30' | 30' | 30' |
| 15 | 15' | 19' | 28' | 30' | 30' |
| 18 | 14' | 18' | 30' | 30' | 30' |
| 21 | 15' | 22' | 30' | 30' | 30' |
| 24 | 18' | 28' | 30' | 30' | 30' |
| 27 | 20' | 30' | 30' | 30' | 30' |
| 30 | 19' | 29' | 30' | 30' | 30' |
| 33 | 20' | 30' | 30' | 30' | 30' |
| 36 | 20' | 30' | 30' | 30' | 30' |
| 39 | 19' | 29' | 30' | 30' | 30' |
| 42 | 18' | 26' | 30' | 30' | 30' |

As = Area of Steel Reinforcing

REINFORCED CONCRETE ARCH PIPE

| Pipe Size (Inch by inch) | Equiv. Diameter (Inches) | Class A-III | Class A-IV |
|--------------------------|--------------------------|-------------|------------|
| 18 by 11 | 15 | 6' | 11' |
| 22 by 13 | 18 | 6' | 11' |
| 26 by 15 | 21 | 6' | 13' |
| 29 by 18 | 24 | 7' | 15' |
| 36 by 22 | 30 | 8' | 15' |
| 44 by 27 | 36 | 8' | 14' |
| 51 by 31 | 42 | 8' | 15' |
| 58 by 36 | 48 | 8' | 15' |
| 65 by 40 | 54 | 8' | 15' |
| 73 by 45 | 60 | 8' | 14' |
| 88 by 54 | 72 | 9' | 14' |

Based on Class R-5 bedding.

FIGURE 3010.102 SHEET 2 OF 2

| | | |
|--|-----------------------------------|--------------------------|
| SUDAS | Iowa Department of Transportation | REVISION NEW 04-21-09 |
| | | SW-102 |
| FIGURE 3010.102 | STANDARD ROAD PLAN | SHEET 2 of 2 |
| REVISIONS: New. Replaces SUDAS Figures 3010.3, 3010.7, and 3010.8. | | |
| SUDAS DIRECTOR | DESIGN METHODS ENGINEER | |
| RIGID GRAVITY PIPE TRENCH BEDDING | | |