



**PIPE CHART**  
ALL PIPE IS 18" DIA. CMP UNLESS OTHERWISE NOTED

| PIPE NO. | SIZE | LENGTH | SLOPE | AREA | T°   | INTERV. (100 FT) | VEL. | INLET | OUTLET |
|----------|------|--------|-------|------|------|------------------|------|-------|--------|
| 1-1      | 36"  | 140'   | 0.00% | 4.7  | 0.00 | 83.87            | 3.8  | 18V14 | 18V18  |
| 1-2      | 36"  | 180'   | 0.00% | 6.3  | 0.00 | 83.87            | 4.5  | 18V18 | 18V24  |
| 1-3      | 36"  | 200'   | 0.00% | 7.2  | 0.00 | 83.87            | 4.9  | 18V24 | 18V30  |
| 1-4      | 36"  | 220'   | 0.00% | 7.9  | 0.00 | 83.87            | 5.3  | 18V30 | 18V36  |
| 1-5      | 36"  | 240'   | 0.00% | 8.5  | 0.00 | 83.87            | 5.7  | 18V36 | 18V42  |
| 1-6      | 36"  | 260'   | 0.00% | 9.1  | 0.00 | 83.87            | 6.1  | 18V42 | 18V48  |
| 1-7      | 36"  | 280'   | 0.00% | 9.7  | 0.00 | 83.87            | 6.5  | 18V48 | 18V54  |
| 1-8      | 36"  | 300'   | 0.00% | 10.3 | 0.00 | 83.87            | 6.9  | 18V54 | 18V60  |
| 1-9      | 36"  | 320'   | 0.00% | 10.9 | 0.00 | 83.87            | 7.3  | 18V60 | 18V66  |
| 1-10     | 36"  | 340'   | 0.00% | 11.5 | 0.00 | 83.87            | 7.7  | 18V66 | 18V72  |
| 1-11     | 36"  | 360'   | 0.00% | 12.1 | 0.00 | 83.87            | 8.1  | 18V72 | 18V78  |
| 1-12     | 36"  | 380'   | 0.00% | 12.7 | 0.00 | 83.87            | 8.5  | 18V78 | 18V84  |
| 1-13     | 36"  | 400'   | 0.00% | 13.3 | 0.00 | 83.87            | 8.9  | 18V84 | 18V90  |
| 1-14     | 36"  | 420'   | 0.00% | 13.9 | 0.00 | 83.87            | 9.3  | 18V90 | 18V96  |
| 1-15     | 36"  | 440'   | 0.00% | 14.5 | 0.00 | 83.87            | 9.7  | 18V96 | 19V02  |
| 1-16     | 36"  | 460'   | 0.00% | 15.1 | 0.00 | 83.87            | 10.1 | 19V02 | 19V08  |
| 1-17     | 36"  | 480'   | 0.00% | 15.7 | 0.00 | 83.87            | 10.5 | 19V08 | 19V14  |
| 1-18     | 36"  | 500'   | 0.00% | 16.3 | 0.00 | 83.87            | 10.9 | 19V14 | 19V20  |
| 1-19     | 36"  | 520'   | 0.00% | 16.9 | 0.00 | 83.87            | 11.3 | 19V20 | 19V26  |
| 1-20     | 36"  | 540'   | 0.00% | 17.5 | 0.00 | 83.87            | 11.7 | 19V26 | 19V32  |
| 1-21     | 36"  | 560'   | 0.00% | 18.1 | 0.00 | 83.87            | 12.1 | 19V32 | 19V38  |
| 1-22     | 36"  | 580'   | 0.00% | 18.7 | 0.00 | 83.87            | 12.5 | 19V38 | 19V44  |
| 1-23     | 36"  | 600'   | 0.00% | 19.3 | 0.00 | 83.87            | 12.9 | 19V44 | 19V50  |
| 1-24     | 36"  | 620'   | 0.00% | 19.9 | 0.00 | 83.87            | 13.3 | 19V50 | 19V56  |
| 1-25     | 36"  | 640'   | 0.00% | 20.5 | 0.00 | 83.87            | 13.7 | 19V56 | 20V02  |
| 1-26     | 36"  | 660'   | 0.00% | 21.1 | 0.00 | 83.87            | 14.1 | 20V02 | 20V08  |
| 1-27     | 36"  | 680'   | 0.00% | 21.7 | 0.00 | 83.87            | 14.5 | 20V08 | 20V14  |
| 1-28     | 36"  | 700'   | 0.00% | 22.3 | 0.00 | 83.87            | 14.9 | 20V14 | 20V20  |
| 1-29     | 36"  | 720'   | 0.00% | 22.9 | 0.00 | 83.87            | 15.3 | 20V20 | 20V26  |
| 1-30     | 36"  | 740'   | 0.00% | 23.5 | 0.00 | 83.87            | 15.7 | 20V26 | 20V32  |
| 1-31     | 36"  | 760'   | 0.00% | 24.1 | 0.00 | 83.87            | 16.1 | 20V32 | 20V38  |
| 1-32     | 36"  | 780'   | 0.00% | 24.7 | 0.00 | 83.87            | 16.5 | 20V38 | 20V44  |
| 1-33     | 36"  | 800'   | 0.00% | 25.3 | 0.00 | 83.87            | 16.9 | 20V44 | 20V50  |
| 1-34     | 36"  | 820'   | 0.00% | 25.9 | 0.00 | 83.87            | 17.3 | 20V50 | 20V56  |
| 1-35     | 36"  | 840'   | 0.00% | 26.5 | 0.00 | 83.87            | 17.7 | 20V56 | 21V02  |
| 1-36     | 36"  | 860'   | 0.00% | 27.1 | 0.00 | 83.87            | 18.1 | 21V02 | 21V08  |
| 1-37     | 36"  | 880'   | 0.00% | 27.7 | 0.00 | 83.87            | 18.5 | 21V08 | 21V14  |
| 1-38     | 36"  | 900'   | 0.00% | 28.3 | 0.00 | 83.87            | 18.9 | 21V14 | 21V20  |
| 1-39     | 36"  | 920'   | 0.00% | 28.9 | 0.00 | 83.87            | 19.3 | 21V20 | 21V26  |
| 1-40     | 36"  | 940'   | 0.00% | 29.5 | 0.00 | 83.87            | 19.7 | 21V26 | 21V32  |
| 1-41     | 36"  | 960'   | 0.00% | 30.1 | 0.00 | 83.87            | 20.1 | 21V32 | 21V38  |
| 1-42     | 36"  | 980'   | 0.00% | 30.7 | 0.00 | 83.87            | 20.5 | 21V38 | 21V44  |
| 1-43     | 36"  | 1000'  | 0.00% | 31.3 | 0.00 | 83.87            | 20.9 | 21V44 | 21V50  |
| 1-44     | 36"  | 1020'  | 0.00% | 31.9 | 0.00 | 83.87            | 21.3 | 21V50 | 21V56  |
| 1-45     | 36"  | 1040'  | 0.00% | 32.5 | 0.00 | 83.87            | 21.7 | 21V56 | 22V02  |
| 1-46     | 36"  | 1060'  | 0.00% | 33.1 | 0.00 | 83.87            | 22.1 | 22V02 | 22V08  |
| 1-47     | 36"  | 1080'  | 0.00% | 33.7 | 0.00 | 83.87            | 22.5 | 22V08 | 22V14  |
| 1-48     | 36"  | 1100'  | 0.00% | 34.3 | 0.00 | 83.87            | 22.9 | 22V14 | 22V20  |
| 1-49     | 36"  | 1120'  | 0.00% | 34.9 | 0.00 | 83.87            | 23.3 | 22V20 | 22V26  |
| 1-50     | 36"  | 1140'  | 0.00% | 35.5 | 0.00 | 83.87            | 23.7 | 22V26 | 22V32  |
| 1-51     | 36"  | 1160'  | 0.00% | 36.1 | 0.00 | 83.87            | 24.1 | 22V32 | 22V38  |
| 1-52     | 36"  | 1180'  | 0.00% | 36.7 | 0.00 | 83.87            | 24.5 | 22V38 | 22V44  |
| 1-53     | 36"  | 1200'  | 0.00% | 37.3 | 0.00 | 83.87            | 24.9 | 22V44 | 22V50  |
| 1-54     | 36"  | 1220'  | 0.00% | 37.9 | 0.00 | 83.87            | 25.3 | 22V50 | 22V56  |
| 1-55     | 36"  | 1240'  | 0.00% | 38.5 | 0.00 | 83.87            | 25.7 | 22V56 | 23V02  |
| 1-56     | 36"  | 1260'  | 0.00% | 39.1 | 0.00 | 83.87            | 26.1 | 23V02 | 23V08  |
| 1-57     | 36"  | 1280'  | 0.00% | 39.7 | 0.00 | 83.87            | 26.5 | 23V08 | 23V14  |
| 1-58     | 36"  | 1300'  | 0.00% | 40.3 | 0.00 | 83.87            | 26.9 | 23V14 | 23V20  |
| 1-59     | 36"  | 1320'  | 0.00% | 40.9 | 0.00 | 83.87            | 27.3 | 23V20 | 23V26  |
| 1-60     | 36"  | 1340'  | 0.00% | 41.5 | 0.00 | 83.87            | 27.7 | 23V26 | 23V32  |
| 1-61     | 36"  | 1360'  | 0.00% | 42.1 | 0.00 | 83.87            | 28.1 | 23V32 | 23V38  |
| 1-62     | 36"  | 1380'  | 0.00% | 42.7 | 0.00 | 83.87            | 28.5 | 23V38 | 23V44  |
| 1-63     | 36"  | 1400'  | 0.00% | 43.3 | 0.00 | 83.87            | 28.9 | 23V44 | 23V50  |
| 1-64     | 36"  | 1420'  | 0.00% | 43.9 | 0.00 | 83.87            | 29.3 | 23V50 | 23V56  |
| 1-65     | 36"  | 1440'  | 0.00% | 44.5 | 0.00 | 83.87            | 29.7 | 23V56 | 24V02  |
| 1-66     | 36"  | 1460'  | 0.00% | 45.1 | 0.00 | 83.87            | 30.1 | 24V02 | 24V08  |
| 1-67     | 36"  | 1480'  | 0.00% | 45.7 | 0.00 | 83.87            | 30.5 | 24V08 | 24V14  |
| 1-68     | 36"  | 1500'  | 0.00% | 46.3 | 0.00 | 83.87            | 30.9 | 24V14 | 24V20  |
| 1-69     | 36"  | 1520'  | 0.00% | 46.9 | 0.00 | 83.87            | 31.3 | 24V20 | 24V26  |
| 1-70     | 36"  | 1540'  | 0.00% | 47.5 | 0.00 | 83.87            | 31.7 | 24V26 | 24V32  |
| 1-71     | 36"  | 1560'  | 0.00% | 48.1 | 0.00 | 83.87            | 32.1 | 24V32 | 24V38  |
| 1-72     | 36"  | 1580'  | 0.00% | 48.7 | 0.00 | 83.87            | 32.5 | 24V38 | 24V44  |
| 1-73     | 36"  | 1600'  | 0.00% | 49.3 | 0.00 | 83.87            | 32.9 | 24V44 | 24V50  |
| 1-74     | 36"  | 1620'  | 0.00% | 49.9 | 0.00 | 83.87            | 33.3 | 24V50 | 24V56  |
| 1-75     | 36"  | 1640'  | 0.00% | 50.5 | 0.00 | 83.87            | 33.7 | 24V56 | 25V02  |
| 1-76     | 36"  | 1660'  | 0.00% | 51.1 | 0.00 | 83.87            | 34.1 | 25V02 | 25V08  |
| 1-77     | 36"  | 1680'  | 0.00% | 51.7 | 0.00 | 83.87            | 34.5 | 25V08 | 25V14  |
| 1-78     | 36"  | 1700'  | 0.00% | 52.3 | 0.00 | 83.87            | 34.9 | 25V14 | 25V20  |
| 1-79     | 36"  | 1720'  | 0.00% | 52.9 | 0.00 | 83.87            | 35.3 | 25V20 | 25V26  |
| 1-80     | 36"  | 1740'  | 0.00% | 53.5 | 0.00 | 83.87            | 35.7 | 25V26 | 25V32  |
| 1-81     | 36"  | 1760'  | 0.00% | 54.1 | 0.00 | 83.87            | 36.1 | 25V32 | 25V38  |
| 1-82     | 36"  | 1780'  | 0.00% | 54.7 | 0.00 | 83.87            | 36.5 | 25V38 | 25V44  |
| 1-83     | 36"  | 1800'  | 0.00% | 55.3 | 0.00 | 83.87            | 36.9 | 25V44 | 25V50  |
| 1-84     | 36"  | 1820'  | 0.00% | 55.9 | 0.00 | 83.87            | 37.3 | 25V50 | 25V56  |
| 1-85     | 36"  | 1840'  | 0.00% | 56.5 | 0.00 | 83.87            | 37.7 | 25V56 | 26V02  |
| 1-86     | 36"  | 1860'  | 0.00% | 57.1 | 0.00 | 83.87            | 38.1 | 26V02 | 26V08  |
| 1-87     | 36"  | 1880'  | 0.00% | 57.7 | 0.00 | 83.87            | 38.5 | 26V08 | 26V14  |
| 1-88     | 36"  | 1900'  | 0.00% | 58.3 | 0.00 | 83.87            | 38.9 | 26V14 | 26V20  |
| 1-89     | 36"  | 1920'  | 0.00% | 58.9 | 0.00 | 83.87            | 39.3 | 26V20 | 26V26  |
| 1-90     | 36"  | 1940'  | 0.00% | 59.5 | 0.00 | 83.87            | 39.7 | 26V26 | 26V32  |
| 1-91     | 36"  | 1960'  | 0.00% | 60.1 | 0.00 | 83.87            | 40.1 | 26V32 | 26V38  |
| 1-92     | 36"  | 1980'  | 0.00% | 60.7 | 0.00 | 83.87            | 40.5 | 26V38 | 26V44  |
| 1-93     | 36"  | 2000'  | 0.00% | 61.3 | 0.00 | 83.87            | 40.9 | 26V44 | 26V50  |
| 1-94     | 36"  | 2020'  | 0.00% | 61.9 | 0.00 | 83.87            | 41.3 | 26V50 | 26V56  |
| 1-95     | 36"  | 2040'  | 0.00% | 62.5 | 0.00 | 83.87            | 41.7 | 26V56 | 27V02  |
| 1-96     | 36"  | 2060'  | 0.00% | 63.1 | 0.00 | 83.87            | 42.1 | 27V02 | 27V08  |
| 1-97     | 36"  | 2080'  | 0.00% | 63.7 | 0.00 | 83.87            | 42.5 | 27V08 | 27V14  |
| 1-98     | 36"  | 2100'  | 0.00% | 64.3 | 0.00 | 83.87            | 42.9 | 27V14 | 27V20  |
| 1-99     | 36"  | 2120'  | 0.00% | 64.9 | 0.00 | 83.87            | 43.3 | 27V20 | 27V26  |
| 1-100    | 36"  | 2140'  | 0.00% | 65.5 | 0.00 | 83.87            | 43.7 | 27V26 | 27V32  |
| 1-101    | 36"  | 2160'  | 0.00% | 66.1 | 0.00 | 83.87            | 44.1 | 27V32 | 27V38  |
| 1-102    | 36"  | 2180'  | 0.00% | 66.7 | 0.00 | 83.87            | 44.5 | 27V38 | 27V44  |
| 1-103    | 36"  | 2200'  | 0.00% | 67.3 | 0.00 | 83.87            | 44.9 | 27V44 | 27V50  |
| 1-104    | 36"  | 2220'  | 0.00% | 67.9 | 0.00 | 83.87            | 45.3 | 27V50 | 27V56  |
| 1-105    | 36"  | 2240'  | 0.00% | 68.5 | 0.00 | 83.87            | 45.7 | 27V56 | 28V02  |
| 1-106    | 36"  | 2260'  | 0.00% | 69.1 | 0.00 | 83.87            | 46.1 | 28V02 | 28V08  |
| 1-107    | 36"  | 2280'  | 0.00% | 69.7 | 0.00 | 83.87            | 46.5 | 28V08 | 28V14  |
| 1-108    | 36"  | 2300'  | 0.00% | 70.3 | 0.00 | 83.87            | 46.9 | 28V14 | 28V20  |
| 1-109    | 36"  | 2320'  | 0.00% | 70.9 | 0.00 | 83.87            | 47.3 | 28V20 | 28V26  |
| 1-110    | 36"  | 2340'  | 0.00% | 71.5 | 0.00 | 83.87            | 47.7 | 28V26 | 28V32  |
| 1-111    | 36"  | 2360'  | 0.00% | 72.1 | 0.00 | 83.87            | 48.1 | 28V32 | 28V38  |
| 1-112    | 36"  | 2380'  | 0.00% | 72.7 | 0.00 | 83.87            | 48.5 | 28V38 | 28V44  |
| 1-113    | 36"  | 2400'  | 0.00% | 73.3 | 0.00 | 83.87            | 48.9 | 28V44 | 28V50  |
| 1-114    | 36"  | 2420'  | 0.00% | 73.9 | 0.00 | 83.87            | 49.3 | 28V50 | 28V56  |
| 1-115    | 36"  | 2440'  | 0.00% | 74.5 | 0.00 | 83.87            | 49.7 | 28V56 | 29V02  |
| 1-116    | 36"  | 2460'  | 0.00% | 75.1 | 0.00 | 83.87            | 50.1 | 29V02 | 29V08  |
| 1-117    | 36"  | 2480'  | 0.00% | 75.7 | 0.00 | 83.87            | 50.5 | 29V08 | 29V14  |
| 1-118    | 36"  | 2500'  | 0.00% | 76.3 | 0.00 | 83.87            | 50.9 | 29V14 | 29V20  |
| 1-119    | 36"  | 2520'  | 0.00% | 76.9 | 0.00 | 83.87            | 51.3 | 29V20 | 29V26  |
| 1-120    | 36"  | 2540'  | 0.00% | 77.5 | 0.00 | 83.87            | 51.7 | 29V26 | 29V32  |
| 1-121    | 36"  | 2560'  | 0.00% | 78.1 | 0.00 | 83.87            | 52.1 | 29V32 | 29V38  |
| 1-122    | 36"  | 2580'  | 0.00% | 78.7 | 0.00 | 83.87            | 52.5 | 29V38 | 29V44  |
| 1-123    | 36"  | 2600'  | 0.00% | 79.3 | 0.00 | 83.87            | 52.9 | 29V44 | 29V50  |
| 1-124    | 36"  | 2620'  | 0.00% | 79.9 | 0.00 | 83.87            | 53.3 | 29V50 | 29V56  |
| 1-125    | 36"  | 2640'  | 0.00% | 80.5 | 0.00 | 83.87            | 53.7 | 29V56 | 30V02  |
| 1-126    | 36"  | 2660'  | 0.00% | 81.1 | 0.00 | 83.87            | 54.1 | 30V02 | 30V08  |
| 1-127    | 36"  | 2680'  | 0.00% | 81.7 | 0.00 | 83.87            | 54.5 | 30V08 | 30V14  |
| 1-128    | 36"  | 2700'  | 0.00% | 82.3 | 0.00 | 83.87            | 54.9 |       |        |