| LINE | NO. of MANHOLE STEPS | R | COLUMN "A" DIMENSIONS H | K | T | REINFORCING STEEL A LENGTH | A NO | B LENGTH | B NO | C NO.=16 LENGTH | D NO.=3 LENGTH | QUANTITIES CONC. $yd^3$ | REINF. STEEL lbs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | -- | 4 | 3'-10 | 2'-8 | 6" | 3'-8 | 13 | 4'-4 | 16 | 3'-5 | 1'-6 | 1.41 | 184 |
| 2 | 2 | 4 | 4'-4 | 3'-2 | | | 13 | | 16 | 3'-11 | | 1.55 | 192 |
| 3 | 2 | 5 | 4'-10 | 3'-8 | | | 15 | | 18 | 4'-5 | | 1.69 | 217 |
| 4 | 3 | 5 | 5'-4 | 4'-2 | | | 15 | | 18 | 4'-11 | | 1.83 | 225 |
| 5 | 3 | 6 | 5'-10 | 4'-8 | | | 17 | | 20 | 5'-5 | | 1.98 | 250 |
| 6 | 4 | 6 | 6'-4 | 5'-2 | | | 17 | | 20 | 5'-11 | | 2.12 | 259 |
| 7 | 4 | 7 | 6'-10 | 5'-8 | | | 19 | | 22 | 6'-5 | | 2.26 | 284 |
| 8 | 5 | 7 | 7'-4 | 6'-2 | | | 19 | | 22 | 6'-11 | | 2.40 | 292 |
| 9 | 5 | 8 | 7'-10 | 6'-8 | | | 21 | | 24 | 7'-5 | | 2.54 | 317 |
| 10 | 6 | 8 | 8'-4 | 7'-2 | | | 21 | | 24 | 7'-11 | | 2.69 | 326 |
| 11 | 6 | 9 | 8'-10 | 7'-8 | | | 23 | | 26 | 8'-5 | | 2.83 | 351 |
| 12 | 7 | 9 | 9'-4 | 8'-2 | | | 23 | | 26 | 8'-11 | | 2.97 | 359 |
| 13 | 7 | 10 | 9'-10 | 8'-8 | | | 25 | | 28 | 9'-5 | | 3.11 | 384 |
| 14 | 8 | 10 | 10'-4 | 9'-2 | | | 25 | | 28 | 9'-11 | | 3.25 | 392 |
| 15 | 8 | 11 | 10'-10 | 9'-8 | | | 27 | | 30 | 10'-5 | | 3.40 | 417 |
| 16 | 9 | 11 | 11'-4 | 10'-2 | | | 27 | | 30 | 10'-11 | | 3.54 | 426 |
| 17 | 9 | 12 | 11'-10 | 10'-8 | | | 29 | | 32 | 11'-5 | | 3.68 | 451 |
| 18 | 10 | 12 | 12'-4 | 11'-2 | 6" | 3'-8 | 29 | 4'-4 | 32 | 11'-11 | 1'-6 | 3.82 | 459 |
| 19 | 10 | 13 | 12'-11 | 11'-8 | 7" | 3'-10 | 31 | 4'-6 | 34 | 12'-6 | 1'-7 | 4.72 | 497 |
| 20 | 11 | 13 | 13'-5 | 12'-2 | | | 31 | | 34 | 13'-0 | | 4.89 | 505 |
| 21 | 11 | 14 | 13'-11 | 12'-8 | | | 33 | | 36 | 13'-6 | | 5.06 | 531 |
| 22 | 12 | 14 | 14'-5 | 13'-2 | | | 33 | | 36 | 14'-0 | | 5.23 | 539 |
| 23 | 12 | 15 | 14'-11 | 13'-8 | | | 35 | | 38 | 14'-6 | | 5.40 | 565 |
| 24 | 13 | 15 | 15'-5 | 14'-2 | | | 35 | | 38 | 15'-0 | | 5.57 | 574 |
| 25 | 13 | 16 | 15'-11 | 14'-8 | | | 37 | | 40 | 15'-6 | | 5.74 | 599 |
| 26 | 14 | 16 | 16'-5 | 15'-2 | | | 37 | | 40 | 16'-0 | | 5.91 | 608 |
| 27 | 14 | 17 | 16'-11 | 15'-8 | | | 39 | | 42 | 16'-6 | | 6.08 | 633 |
| 28 | 15 | 17 | 17'-5 | 16'-2 | | | 39 | | 42 | 17'-0 | | 6.25 | 642 |
| 29 | 15 | 18 | 17'-11 | 16'-8 | | | 41 | | 44 | 17'-6 | | 6.42 | 667 |
| 30 | 16 | 18 | 18'-5 | 17'-2 | | | 41 | | 44 | 18'-0 | | 6.59 | 676 |
| 31 | 16 | 19 | 18'-11 | 17'-8 | | | 43 | | 46 | 18'-6 | | 6.76 | 702 |
| 32 | 17 | 19 | 19'-5 | 18'-2 | | | 43 | | 46 | 19'-0 | | 6.92 | 710 |
| 33 | 17 | 20 | 19'-11 | 18'-8 | | | 45 | | 48 | 19'-6 | | 7.09 | 736 |
| 34 | 18 | 20 | 20'-5 | 19'-2 | | | 45 | | 48 | 20'-0 | | 7.26 | 744 |
| 35 | 18 | 21 | 20'-11 | 19'-8 | | | 47 | | 50 | 20'-6 | | 7.43 | 770 |
| 36 | 19 | 21 | 21'-5 | 20'-2 | | | 47 | | 50 | 21'-0 | | 7.60 | 778 |
| 37 | 19 | 22 | 21'-11 | 20'-8 | | | 49 | | 52 | 21'-6 | | 7.77 | 804 |
| 38 | 20 | 22 | 22'-5 | 21'-2 | 7" | 3'-10 | 49 | 4'-6 | 52 | 22'-0 | 1'-7 | 7.94 | 812 |
| 39 | 20 | 23 | 23'-0 | 21'-8 | 8" | 4'-0 | 51 | 4'-8 | 54 | 22'-7 | 1'-8 | 9.47 | 858 |
| 40 | 21 | 23 | 23'-6 | 22'-2 | | | 51 | | 54 | 23'-1 | | 9.67 | 866 |
| 41 | 21 | 24 | 24'-0 | 22'-8 | | | 53 | | 56 | 23'-7 | | 9.87 | 892 |
| 42 | 22 | 24 | 24'-6 | 23'-2 | | | 53 | | 56 | 24'-1 | | 10.07 | 901 |
| 43 | 22 | 25 | 25'-0 | 23'-8 | | | 55 | | 58 | 24'-7 | | 10.26 | 927 |
| 44 | 23 | 25 | 25'-6 | 24'-2 | | | 55 | | 58 | 25'-1 | | 10.46 | 936 |
| 45 | 23 | 26 | 26'-0 | 24'-8 | | | 57 | | 60 | 25'-7 | | 10.66 | 962 |
| 46 | 24 | 26 | 26'-6 | 25'-2 | | | 57 | | 60 | 26'-1 | | 10.86 | 970 |
| 47 | 24 | 27 | 27'-0 | 25'-8 | | | 59 | | 62 | 26'-7 | | 11.05 | 997 |
| 48 | 25 | 27 | 27'-6 | 26'-2 | | | 59 | | 62 | 27'-1 | | 11.25 | 1005 |
| 49 | 25 | 28 | 28'-0 | 26'-8 | | | 61 | | 64 | 27'-7 | | 11.45 | 1031 |
| 50 | 26 | 28 | 28'-6 | 27'-2 | | | 61 | | 64 | 28'-1 | | 11.65 | 1040 |
| 51 | 26 | 29 | 29'-0 | 27'-8 | | | 63 | | 66 | 28'-7 | | 11.84 | 1066 |
| 52 | 27 | 29 | 29'-6 | 28'-2 | | | 63 | | 66 | 29'-1 | | 12.04 | 1075 |
| 53 | 27 | 30 | 30'-0 | 28'-8 | | | 65 | | 68 | 29'-7 | | 12.24 | 1101 |
| 54 | 28 | 30 | 30'-6 | 29'-2 | 8" | 4'-0 | 65 | 4'-8 | 68 | 30'-1 | 1'-8 | 12.44 | 1109 |
| | | | W=3'-0, M=1'-4½ | | | | | | | | | N=5, Q=3 | |

| LINE | COLUMN "B" DIMENSIONS H | K | T | REINFORCING STEEL A LENGTH | A NO | B LENGTH | B NO | C NO.=16 LENGTH | D NO.=3 LENGTH | QUANTITIES CONC. $yd^3$ | REINF. STEEL lbs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ---- | ---- | --- | ---- | -- | ---- | -- | ---- | --- | ---- | ---- |
| 2 | 4'-5 | 3'-3 | 6" | 4'-2 | 13 | 4'-4 | 17 | 4'-0 | 2'-0 | 1.73 | 206 |
| 3 | 4'-11 | 3'-9 | | | 15 | | 19 | 4'-6 | | 1.88 | 232 |
| 4 | 5'-5 | 4'-3 | | | 15 | | 19 | 5'-0 | | 2.03 | 241 |
| 5 | 5'-11 | 4'-9 | | | 17 | | 21 | 5'-6 | | 2.19 | 266 |
| 6 | 6'-5 | 5'-3 | | | 17 | | 21 | 6'-0 | | 2.34 | 275 |
| 7 | 6'-11 | 5'-9 | | | 19 | | 23 | 6'-6 | | 2.49 | 303 |
| 8 | 7'-5 | 6'-3 | | | 19 | | 23 | 7'-0 | | 2.64 | 310 |
| 9 | 7'-11 | 6'-9 | | | 21 | | 25 | 7'-6 | | 2.79 | 336 |
| 10 | 8'-5 | 7'-3 | | | 21 | | 25 | 8'-0 | | 2.94 | 344 |
| 11 | 8'-11 | 7'-9 | | | 23 | | 27 | 8'-6 | | 3.09 | 370 |
| 12 | 9'-5 | 8'-3 | | | 23 | | 27 | 9'-0 | | 3.24 | 378 |
| 13 | 9'-11 | 8'-9 | | | 25 | | 29 | 9'-6 | | 3.39 | 405 |
| 14 | 10'-5 | 9'-3 | | | 25 | | 29 | 10'-0 | | 3.54 | 413 |
| 15 | 10'-11 | 9'-9 | | | 27 | | 31 | 10'-6 | | 3.70 | 439 |
| 16 | 11'-5 | 10'-3 | | | 27 | | 31 | 11'-0 | | 3.85 | 447 |
| 17 | 11'-11 | 10'-9 | | | 29 | | 33 | 11'-6 | | 4.00 | 473 |
| 18 | 12'-6 | 11'-3 | 6" | 4'-2 | 29 | 4'-4 | 33 | 12'-0 | 2'-0 | 4.15 | 481 |
| 19 | 13'-0 | 11'-9 | 7" | 4'-4 | 31 | 4'-6 | 35 | 12'-7 | 2'-1 | 5.12 | 521 |
| 20 | 13'-6 | 12'-3 | | | 31 | | 35 | 13'-1 | | 5.30 | 529 |
| 21 | 14'-0 | 12'-9 | | | 33 | | 37 | 13'-7 | | 5.48 | 556 |
| 22 | 14'-6 | 13'-3 | | | 33 | | 37 | 14'-1 | | 5.66 | 564 |
| 23 | 15'-0 | 13'-9 | | | 35 | | 39 | 14'-7 | | 5.84 | 591 |
| 24 | 15'-6 | 14'-3 | | | 35 | | 39 | 15'-1 | | 6.02 | 599 |
| 25 | 16'-0 | 14'-9 | | | 37 | | 41 | 15'-7 | | 6.20 | 626 |
| 26 | 16'-6 | 15'-3 | | | 37 | | 41 | 16'-1 | | 6.38 | 634 |
| 27 | 17'-0 | 15'-9 | | | 39 | | 43 | 16'-7 | | 6.56 | 661 |
| 28 | 17'-6 | 16'-3 | | | 39 | | 43 | 17'-1 | | 6.74 | 669 |
| 29 | 18'-0 | 16'-9 | | | 41 | | 45 | 17'-7 | | 6.92 | 696 |
| 30 | 18'-6 | 17'-3 | | | 41 | | 45 | 18'-1 | | 7.10 | 704 |
| 31 | 19'-0 | 17'-9 | | | 43 | | 47 | 18'-7 | | 7.28 | 731 |
| 32 | 19'-6 | 18'-3 | | | 43 | | 47 | 19'-1 | | 7.46 | 740 |
| 33 | 20'-0 | 18'-9 | | | 45 | | 49 | 19'-7 | | 7.64 | 766 |
| 34 | 20'-6 | 19'-3 | | | 45 | | 49 | 20'-1 | | 7.82 | 775 |
| 35 | 21'-0 | 19'-9 | | | 47 | | 51 | 20'-7 | | 8.10 | 801 |
| 36 | 21'-6 | 20'-3 | | | 47 | | 51 | 21'-1 | | 8.18 | 810 |
| 37 | 22'-0 | 20'-9 | | | 49 | | 53 | 21'-7 | | 8.36 | 837 |
| 38 | 22'-6 | 21'-3 | 7" | 4'-4 | 49 | 4'-6 | 53 | 22'-1 | 2'-1 | 8.54 | 345 |
| 39 | 23'-1 | 21'-9 | 8" | 4'-6 | 51 | 4'-8 | 55 | 22'-8 | 2'-2 | 10.17 | 892 |
| 40 | 23'-7 | 22'-3 | | | 51 | | 55 | 23'-2 | | 10.38 | 900 |
| 41 | 24'-1 | 22'-9 | | | 53 | | 57 | 23'-8 | | 10.59 | 928 |
| 42 | 24'-7 | 23'-3 | | | 53 | | 57 | 24'-2 | | 10.80 | 936 |
| 43 | 25'-1 | 23'-9 | | | 55 | | 59 | 24'-8 | | 11.01 | 963 |
| 44 | 25'-7 | 24'-3 | | | 55 | | 59 | 25'-2 | | 11.22 | 972 |
| 45 | 26'-1 | 24'-9 | | | 57 | | 61 | 25'-8 | | 11.43 | 1000 |
| 46 | 26'-7 | 25'-3 | | | 57 | | 61 | 26'-2 | | 11.64 | 1008 |
| 47 | 27'-1 | 25'-9 | | | 59 | | 63 | 26'-8 | | 11.85 | 1035 |
| 48 | 27'-7 | 26'-3 | | | 59 | | 63 | 27'-2 | | 12.06 | 1043 |
| 49 | 28'-1 | 26'-9 | | | 61 | | 65 | 27'-8 | | 12.27 | 1071 |
| 50 | 28'-7 | 27'-3 | | | 61 | | 65 | 28'-2 | | 12.48 | 1079 |
| 51 | 29'-1 | 27'-9 | | | 63 | | 67 | 28'-8 | | 12.69 | 1107 |
| 52 | 29'-7 | 28'-3 | | | 63 | | 67 | 29'-2 | | 12.90 | 1115 |
| 53 | 30'-1 | 28'-9 | | | 65 | | 69 | 29'-8 | | 13.11 | 1142 |
| 54 | 30'-7 | 29'-3 | 8" | 4'-6 | 65 | 4'-8 | 69 | 30'-2 | 2'-2 | 13.32 | 1151 |
| | W=3'-6, M=1'-10½ | | | | | | | | | N=5, Q=4 | |

| LINE | COLUMN "C" DIMENSIONS H | K | T | REINFORCING STEEL A LENGTH | A NO | B LENGTH | B NO | C NO.=18 LENGTH | D NO.=3 LENGTH | QUANTITIES CONC. $yd^3$ | REINF. STEEL lbs |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ---- | ---- | --- | ---- | -- | ---- | -- | ---- | --- | ---- | ---- |
| 2 | ---- | ---- | --- | ---- | -- | ---- | -- | ---- | --- | ---- | ---- |
| 3 | 5'-0 | 3'-10 | 6" | 4'-8 | 15 | 4'-4 | 21 | 4'-7 | 2'-6 | 2.08 | 262 |
| 4 | 5'-6 | 4'-4 | | | 15 | | 21 | 5'-1 | | 2.24 | 271 |
| 5 | 6'-0 | 4'-10 | | | 17 | | 23 | 5'-7 | | 2.40 | 299 |
| 6 | 6'-6 | 5'-4 | | | 17 | | 23 | 6'-1 | | 2.57 | 309 |
| 7 | 7'-0 | 5'-10 | | | 19 | | 25 | 6'-7 | | 2.73 | 337 |
| 8 | 7'-6 | 6'-4 | | | 19 | | 25 | 7'-1 | | 2.89 | 346 |
| 9 | 8'-0 | 6'-10 | | | 21 | | 27 | 7'-7 | | 3.05 | 374 |
| 10 | 8'-6 | 7'-4 | | | 21 | | 27 | 8'-1 | | 3.21 | 383 |
| 11 | 9'-0 | 7'-10 | | | 23 | | 29 | 8'-7 | | 3.37 | 412 |
| 12 | 9'-6 | 8'-4 | | | 23 | | 29 | 9'-1 | | 3.53 | 421 |
| 13 | 10'-0 | 8'-10 | | | 25 | | 31 | 9'-7 | | 3.69 | 449 |
| 14 | 10'-6 | 9'-4 | | | 25 | | 31 | 10'-1 | | 3.85 | 459 |
| 15 | 11'-0 | 9'-10 | | | 27 | | 33 | 10'-7 | | 4.01 | 487 |
| 16 | 11'-6 | 10'-4 | | | 27 | | 33 | 11'-1 | | 4.18 | 496 |
| 17 | 12'-0 | 10'-10 | | | 29 | | 35 | 11'-7 | | 4.34 | 524 |
| 18 | 12'-6 | 11'-4 | 6" | 4'-8 | 29 | 4'-4 | 35 | 12'-1 | 2'-6 | 4.50 | 534 |
| 19 | 13'-1 | 11'-10 | 7" | 4'-10 | 31 | 4'-6 | 37 | 12'-8 | 2'-7 | 5.52 | 576 |
| 20 | 13'-7 | 12'-4 | | | 31 | | 37 | 13'-2 | | 5.71 | 585 |
| 21 | 14'-1 | 12'-10 | | | 33 | | 39 | 13'-8 | | 5.90 | 613 |
| 22 | 14'-7 | 13'-4 | | | 33 | | 39 | 14'-2 | | 6.09 | 622 |
| 23 | 15'-1 | 13'-10 | | | 35 | | 41 | 14'-8 | | 6.28 | 651 |
| 24 | 15'-7 | 14'-4 | | | 35 | | 41 | 15'-2 | | 6.47 | 662 |
| 25 | 16'-1 | 14'-10 | | | 37 | | 43 | 15'-8 | | 6.66 | 691 |
| 26 | 16'-7 | 15'-4 | | | 37 | | 43 | 16'-2 | | 6.85 | 700 |
| 27 | 17'-1 | 15'-10 | | | 39 | | 45 | 16'-8 | | 7.04 | 729 |
| 28 | 17'-7 | 16'-4 | | | 39 | | 45 | 17'-2 | | 7.24 | 738 |
| 29 | 18'-1 | 16'-10 | | | 41 | | 47 | 17'-8 | | 7.43 | 767 |
| 30 | 18'-7 | 17'-4 | | | 41 | | 47 | 18'-2 | | 7.62 | 776 |
| 31 | 19'-1 | 17'-10 | | | 43 | | 49 | 18'-8 | | 7.81 | 805 |
| 32 | 19'-7 | 18'-4 | | | 43 | | 49 | 19'-2 | | 8.00 | 815 |
| 33 | 20'-1 | 18'-10 | | | 45 | | 51 | 19'-8 | | 8.19 | 844 |
| 34 | 20'-7 | 19'-4 | | | 45 | | 51 | 20'-2 | | 8.38 | 853 |
| 35 | 21'-1 | 19'-10 | | | 47 | | 53 | 20'-8 | | 8.57 | 882 |
| 36 | 21'-7 | 20'-4 | | | 47 | | 53 | 21'-2 | | 8.76 | 891 |
| 37 | 22'-1 | 20'-10 | | | 49 | | 55 | 21'-8 | | 8.95 | 920 |
| 38 | 22'-7 | 21'-4 | 7" | 4'-10 | 49 | 4'-6 | 55 | 22'-2 | 2'-7 | 9.15 | 929 |
| 39 | 23'-2 | 21'-10 | 8" | 5'-0 | 51 | 4'-8 | 57 | 22'-9 | 2'-8 | 10.86 | 979 |
| 40 | 23'-8 | 22'-4 | | | 51 | | 57 | 23'-3 | | 11.09 | 988 |
| 41 | 24'-2 | 22'-10 | | | 53 | | 59 | 23'-9 | | 11.31 | 1018 |
| 42 | 24'-8 | 23'-4 | | | 53 | | 59 | 24'-3 | | 11.53 | 1027 |
| 43 | 25'-2 | 23'-10 | | | 55 | | 61 | 24'-9 | | 11.75 | 1057 |
| 44 | 25'-8 | 24'-4 | | | 55 | | 61 | 25'-3 | | 11.97 | 1066 |
| 45 | 26'-2 | 24'-10 | | | 57 | | 63 | 25'-9 | | 12.20 | 1096 |
| 46 | 26'-8 | 25'-4 | | | 57 | | 63 | 26'-3 | | 12.42 | 1105 |
| 47 | 27'-2 | 25'-10 | | | 59 | | 65 | 26'-9 | | 12.64 | 1135 |
| 48 | 27'-8 | 26'-4 | | | 59 | | 65 | 27'-3 | | 12.86 | 1144 |
| 49 | 28'-2 | 26'-10 | | | 61 | | 67 | 27'-9 | | 13.08 | 1174 |
| 50 | 28'-8 | 27'-4 | | | 61 | | 67 | 28'-3 | | 13.31 | 1183 |
| 51 | 29'-2 | 27'-10 | | | 63 | | 69 | 28'-9 | | 13.53 | 1212 |
| 52 | 29'-8 | 28'-4 | | | 63 | | 69 | 29'-3 | | 13.75 | 1222 |
| 53 | 30'-2 | 28'-10 | | | 65 | | 71 | 29'-9 | | 13.97 | 1251 |
| 54 | 30'-8 | 29'-4 | 8" | 5'-0 | 65 | 4'-8 | 71 | 30'-3 | 2'-8 | 14.19 | 1261 |
| | W=4'-0, M=2'-4½ | | | | | | | | | N=6, Q=5 | |

| LINE | COLUMN "D" DIMENSIONS H | K | T | REINFORCING STEEL A LENGTH | A NO | B LENGTH | B NO | C NO.=18 LENGTH | D NO.=3 LENGTH | QUANTITIES CONC. $yd^3$ | REINF. STEEL lbs | LINE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ---- | ---- | --- | ---- | -- | ---- | -- | ---- | --- | ---- | ---- | 1 |
| 2 | ---- | ---- | --- | ---- | -- | ---- | -- | ---- | --- | ---- | ---- | 2 |
| 3 | ---- | ---- | --- | ---- | -- | ---- | -- | ---- | --- | ---- | ---- | 3 |
| 4 | 5'-7 | 4'-5 | 6" | 5'-2 | 15 | 4'-4 | 22 | 5'-2 | 3'-0 | 2.45 | 287 | 4 |
| 5 | 6'-1 | 4'-11 | | | 17 | | 24 | 5'-8 | | 2.62 | 316 | 5 |
| 6 | 6'-7 | 5'-5 | | | 17 | | 24 | 6'-2 | | 2.79 | 325 | 6 |
| 7 | 7'-1 | 5'-11 | | | 19 | | 26 | 6'-8 | | 2.96 | 354 | 7 |
| 8 | 7'-7 | 6'-5 | | | 19 | | 26 | 7'-2 | | 3.13 | 364 | 8 |
| 9 | 8'-1 | 6'-11 | | | 21 | | 28 | 7'-8 | | 3.30 | 393 | 9 |
| 10 | 8'-7 | 7'-5 | | | 21 | | 28 | 8'-2 | | 3.47 | 402 | 10 |
| 11 | 9'-1 | 7'-11 | | | 23 | | 30 | 8'-8 | | 3.64 | 432 | 11 |
| 12 | 9'-7 | 8'-5 | | | 23 | | 30 | 9'-2 | | 3.81 | 441 | 12 |
| 13 | 10'-1 | 8'-11 | | | 25 | | 32 | 9'-8 | | 3.98 | 470 | 13 |
| 14 | 10'-7 | 9'-5 | | | 25 | | 32 | 10'-2 | | 4.15 | 480 | 14 |
| 15 | 11'-1 | 9'-11 | | | 27 | | 34 | 10'-8 | | 4.32 | 509 | 15 |
| 16 | 11'-7 | 10'-5 | | | 27 | | 34 | 11'-2 | | 4.49 | 518 | 16 |
| 17 | 12'-1 | 10'-11 | | | 29 | | 36 | 11'-8 | | 4.66 | 547 | 17 |
| 18 | 12'-7 | 11'-5 | 6" | 5'-2 | 29 | 4'-4 | 36 | 12'-2 | 3'-0 | 4.83 | 557 | 18 |
| 19 | 13'-2 | 11'-11 | 7" | 5'-4 | 31 | 4'-6 | 38 | 12'-9 | 3'-1 | 5.92 | 600 | 19 |
| 20 | 13'-8 | 12'-5 | | | 31 | | 38 | 13'-3 | | 6.12 | 609 | 20 |
| 21 | 14'-2 | 12'-11 | | | 33 | | 40 | 13'-9 | | 6.32 | 639 | 21 |
| 22 | 14'-8 | 13'-5 | | | 33 | | 40 | 14'-3 | | 6.52 | 648 | 22 |
| 23 | 15'-2 | 13'-11 | | | 35 | | 42 | 14'-9 | | 6.72 | 678 | 23 |
| 24 | 15'-8 | 14'-5 | | | 35 | | 42 | 15'-3 | | 6.93 | 688 | 24 |
| 25 | 16'-2 | 14'-11 | | | 37 | | 44 | 15'-9 | | 7.13 | 718 | 25 |
| 26 | 16'-8 | 15'-5 | | | 37 | | 44 | 16'-3 | | 7.33 | 727 | 26 |
| 27 | 17'-2 | 15'-11 | | | 39 | | 46 | 16'-9 | | 7.53 | 757 | 27 |
| 28 | 17'-8 | 16'-5 | | | 39 | | 46 | 17'-3 | | 7.74 | 766 | 28 |
| 29 | 18'-2 | 16'-11 | | | 41 | | 48 | 17'-9 | | 7.94 | 796 | 29 |
| 30 | 18'-8 | 17'-5 | | | 41 | | 48 | 18'-3 | | 8.14 | 806 | 30 |
| 31 | 19'-2 | 17'-11 | | | 43 | | 50 | 18'-9 | | 8.34 | 836 | 31 |
| 32 | 19'-8 | 18'-5 | | | 43 | | 50 | 19'-3 | | 8.53 | 845 | 32 |
| 33 | 20'-2 | 18'-11 | | | 45 | | 52 | 19'-9 | | 8.75 | 875 | 33 |
| 34 | 20'-8 | 19'-5 | | | 45 | | 52 | 20'-3 | | 8.95 | 884 | 34 |
| 35 | 21'-2 | 19'-11 | | | 47 | | 54 | 20'-9 | | 9.15 | 914 | 35 |
| 36 | 21'-8 | 20'-5 | | | 47 | | 54 | 21'-3 | | 9.35 | 923 | 36 |
| 37 | 22'-2 | 20'-11 | | | 49 | | 56 | 21'-9 | | 9.55 | 953 | 37 |
| 38 | 22'-8 | 21'-5 | 7" | 5'-4 | 49 | 4'-6 | 56 | 22'-3 | 3'-1 | 9.76 | 962 | 38 |
| 39 | 23'-3 | 21'-11 | 8" | 5'-6 | 51 | 4'-8 | 58 | 22'-10 | 3'-2 | 11.57 | 1013 | 39 |
| 40 | 23'-8 | 22'-5 | | | 51 | | 58 | 23'-4 | | 11.80 | 1023 | 40 |
| 41 | 24'-3 | 22'-11 | | | 53 | | 60 | 23'-10 | | 12.04 | 1053 | 41 |
| 42 | 24'-9 | 23'-5 | | | 53 | | 60 | 24'-4 | | 12.27 | 1063 | 42 |
| 43 | 25'-3 | 23'-11 | | | 55 | | 62 | 24'-10 | | 12.51 | 1093 | 43 |
| 44 | 25'-9 | 24'-5 | | | 55 | | 62 | 25'-4 | | 12.74 | 1103 | 44 |
| 45 | 26'-3 | 24'-11 | | | 57 | | 64 | 25'-10 | | 12.98 | 1133 | 45 |
| 46 | 26'-9 | 25'-5 | | | 57 | | 64 | 26'-4 | | 13.21 | 1143 | 46 |
| 47 | 27'-3 | 25'-11 | | | 59 | | 66 | 26'-10 | | 13.45 | 1173 | 47 |
| 48 | 27'-9 | 26'-5 | | | 59 | | 66 | 27'-4 | | 13.68 | 1183 | 48 |
| 49 | 28'-3 | 26'-11 | | | 61 | | 68 | 27'-10 | | 13.92 | 1213 | 49 |
| 50 | 28'-9 | 27'-5 | | | 61 | | 68 | 28'-4 | | 14.15 | 1223 | 50 |
| 51 | 29'-3 | 27'-11 | | | 63 | | 70 | 28'-10 | | 14.39 | 1253 | 51 |
| 52 | 29'-9 | 28'-5 | | | 63 | | 70 | 29'-4 | | 14.62 | 1263 | 52 |
| 53 | 30'-3 | 28'-11 | | | 65 | | 72 | 29'-10 | | 14.86 | 1293 | 53 |
| 54 | 30'-9 | 29'-5 | 8" | 5'-6 | 65 | 4'-8 | 72 | 30'-4 | 3'-2 | 15.09 | 1303 | 54 |
| | W=4'-6, M=2'-10½ | | | | | | | | | N=6, Q=6 | | |

TABLE 1 : CONCRETE DISPLACED BY PIPES

| PIPE SIZES RCP | CMP | T= 6" $yd^3$ | T= 7" $yd^3$ | T= 8" $yd^3$ |
|---|---|---|---|---|
| | 12" | 0.015 | 0.017 | 0.019 |
| | 18" | 0.033 | 0.038 | 0.044 |
| 18" | 24" | 0.058 | 0.068 | 0.078 |
| 24" | 30" | 0.091 | 0.106 | 0.121 |
| 30" | 36" | 0.131 | 0.153 | 0.174 |
| 36" | 42" | 0.178 | 0.208 | 0.237 |
| 42" | 48" | 0.233 | 0.271 | 0.310 |

TABLE 2 : MAXIMUM PIPE SIZE TO BE USED

| | RCP | CMP |
|---|---|---|
| COL. A | 18" | 12", 18", 24" |
| COL. B | 30" | 30", 36" |
| COL. C | 36" | 42" |
| COL. D | 42" | 48" |

TABLE 3 : CONCRETE NEEDED FOR FORMED INVERT. ( SEE SHEET 2 )

| PIPE SIZES | 12" | 18" | 24" | 30" | 36" | 42" | 48" |
|---|---|---|---|---|---|---|---|
| RCP ($yd^3$) | ----- | 0.191 | 0.222 | 0.286 | 0.378 | 0.483 | ----- |
| CMP ($yd^3$) | 0.081 | 0.106 | 0.120 | 0.124 | 0.169 | 0.220 | 0.277 |

STRUCTURAL STEEL :

RECTANGULAR GRATE & FRAME = 340 lbs
BICYCLE-SAFE GRATE & FRAME = 365 lbs
SOLID COVER & FRAME = 474 lbs

REVISIONS

| NO. | DATE | APPR. | REMARKS |
|---|---|---|---|

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — JAN.01,2005 DATE
CHAIRMAN STANDARDS COMMITTEE
APPROVED — JAN.01,2005 DATE
DEPUTY DIRECTOR

STANDARD CATCH BASIN AND CLEANOUT BOX
SCHEDULE OF INSTALLATION
18" TO 42" RCP
12" TO 48" CMP
STANDARD DRAWING TITLE

STD DWG
CB 9C

DGN File: N:\Eng\Standard.Drawings\Imperial\2005Approved\Catch Basins and Cleanouts (CB)\cb09cudgn
15-DEC-2004