

| SPAN (S) = 3 FT |                  |    |    |    |               |      |         |      |      |       |       |       |         |      |      |         |                  |      |         |      |         |       |       |       |      |      |         |      |           |         |      | HEIGHT (HT) = 2 FT OR 3 FT OR 4 FT |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|-------|-------|-------|---------|------|------|---------|------------------|------|---------|------|---------|-------|-------|-------|------|------|---------|------|-----------|---------|------|------------------------------------|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |       |         |      |      |         | BOTTOM SLAB BARS |      |         |      |         |       |       |       |      |      |         |      | WALL BARS |         |      |                                    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |       | H1 BARS |      |      | H2 BARS |                  |      | A2 BARS |      | J4 BARS |       |       |       |      |      | H3 BARS |      |           | B1 BARS |      | B2 BARS                            |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | T1 | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |       | SIZE    | SPA. | C5   | SIZE    | SPA.             | C6   | SIZE    | SPA. | C4      | K3    |       |       | SIZE | SPA. | C7      | SIZE | SPA.      | SIZE    | SPA. | G1                                 |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=2' | HT=3' | HT=4' |         |      |      |         |                  |      |         |      |         | HT=2' | HT=3' | HT=4' |      |      |         |      |           |         |      |                                    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 10               | 8  | 8  | 8  | 4             | 8.5  | 4       | 10.5 | 23.8 | 26.0  | 26.0  | 26.0  | 4       | 24   | 39.5 | 4       | 24               | 16.0 | 4       | 12   | 4       | 12    | 35.3  | 28    | 40   | 52   | 4       | 12   | 24.5      | 5       | 12   | 5                                  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 10               | 8  | 8  | 8  | 4             | 9    | 4       | 10.5 | 23.8 | 26.0  | 26.0  | 26.0  | 4       | 24   | 39.5 | 4       | 24               | 16.0 | 4       | 12   | 4       | 12    | 33.0  | 28    | 40   | 52   | 4       | 12   | 24.5      | 5       | 12   | 5                                  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 23.8 | 24.0  | 24.0  | 24.0  | 4       | 24   | 39.5 | 4       | 24               | 15.5 | 4       | 12   | 4       | 12    | 30.1  | 28    | 40   | 52   | 4       | 12   | 23.5      | 5       | 12   | 5                                  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 30.0 | 24.0  | 24.0  | 24.0  | 4       | 24   | 24.5 | 4       | 24               | 15.0 | 4       | 12   | 4       | 12    | 28.0  | 28    | 40   | 52   | 4       | 12   | 23.0      | 5       | 12   | 5                                  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 28.0 | 24.0  | 24.0  | 24.0  | 4       | 24   | 23.5 | 4       | 24               | 15.0 | 4       | 12   | 4       | 12    | 27.0  | 28    | 40   | 52   | 4       | 12   | 23.0      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 25.0 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 14.5 | 4       | 12   | 4       | 12    | 24.6  | 28    | 40   | 52   | 4       | 12   | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.9 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 15.5 | 4       | 12   | 4       | 12    | 24.5  | 28    | 40   | 52   | 4       | 12   | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.8 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 16.0 | 4       | 12   | 4       | 12    | 24.5  | 28    | 40   | 52   | 4       | 11.5 | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.6 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 17.0 | 4       | 12   | 4       | 12    | 24.4  | 28    | 40   | 52   | 4       | 10.5 | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.6 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 17.5 | 4       | 12   | 4       | 12    | 24.4  | 28    | 40   | 52   | 4       | 10   | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 17.5 | 4       | 12   | 4       | 12    | 24.3  | 28    | 40   | 52   | 4       | 9.5  | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 18.0 | 4       | 12   | 4       | 12    | 24.3  | 28    | 40   | 52   | 4       | 9    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 18.0 | 4       | 12   | 4       | 12    | 24.3  | 28    | 40   | 52   | 4       | 8.5  | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 24   | 22.0 | 4       | 24               | 18.0 | 4       | 11   | 4       | 11    | 24.3  | 28    | 40   | 52   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 11   | 24.4 | 24.0  | 24.0  | 24.0  | 4       | 23   | 22.0 | 4       | 23               | 18.0 | 4       | 10.5 | 4       | 10.5  | 24.1  | 28    | 40   | 52   | 4       | 7.5  | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 8                | 8  | 8  | 8  | 4             | 11.5 | 4       | 10.5 | 24.4 | 24.0  | 24.0  | 24.0  | 4       | 22   | 22.0 | 4       | 22               | 18.0 | 4       | 9    | 4       | 9.5   | 24.1  | 28    | 40   | 52   | 4       | 7.5  | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 8                | 9  | 8  | 8  | 4             | 11   | 4       | 9.5  | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 21   | 22.0 | 4       | 21               | 18.0 | 4       | 10.5 | 4       | 12    | 24.5  | 29    | 41   | 53   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 8                | 9  | 8  | 8  | 4             | 10.5 | 4       | 9    | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 20   | 22.0 | 4       | 20               | 18.0 | 4       | 9.5  | 4       | 11.5  | 24.4  | 29    | 41   | 53   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 8                | 9  | 8  | 8  | 4             | 10   | 4       | 8.5  | 24.4 | 24.0  | 24.0  | 24.0  | 4       | 19   | 22.0 | 4       | 19               | 18.0 | 4       | 9    | 4       | 11    | 24.4  | 29    | 41   | 53   | 4       | 7.5  | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 8                | 10 | 8  | 8  | 4             | 9.5  | 4       | 8    | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 18   | 22.0 | 4       | 18               | 17.5 | 4       | 10   | 4       | 12    | 24.8  | 30    | 42   | 54   | 4       | 8.5  | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 8                | 10 | 8  | 8  | 4             | 9    | 4       | 7.5  | 24.5 | 24.0  | 24.0  | 24.0  | 4       | 17   | 22.0 | 4       | 17               | 17.5 | 4       | 9.5  | 4       | 12    | 24.8  | 30    | 42   | 54   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 9                | 10 | 8  | 8  | 4             | 9    | 4       | 9    | 24.6 | 25.0  | 25.0  | 25.0  | 4       | 19   | 22.0 | 4       | 19               | 17.5 | 4       | 9    | 4       | 11.5  | 24.8  | 30    | 42   | 54   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 9                | 10 | 8  | 8  | 4             | 9    | 4       | 8.5  | 24.6 | 25.0  | 25.0  | 25.0  | 4       | 18   | 22.0 | 4       | 18               | 17.5 | 4       | 8.5  | 4       | 11    | 24.8  | 30    | 42   | 54   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 9                | 11 | 8  | 8  | 4             | 8.5  | 4       | 8    | 24.8 | 25.0  | 25.0  | 25.0  | 4       | 18   | 22.0 | 4       | 18               | 17.5 | 4       | 9    | 4       | 10.5  | 25.0  | 31    | 43   | 55   | 4       | 8.5  | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 9                | 11 | 8  | 8  | 4             | 8    | 4       | 7.5  | 24.8 | 25.0  | 25.0  | 25.0  | 4       | 17   | 22.0 | 4       | 17               | 17.5 | 4       | 8.5  | 4       | 10.5  | 25.0  | 31    | 43   | 55   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 10               | 11 | 8  | 8  | 4             | 8.5  | 4       | 8    | 24.9 | 26.0  | 26.0  | 26.0  | 4       | 19   | 21.5 | 4       | 19               | 17.5 | 4       | 8.5  | 4       | 10.5  | 25.1  | 31    | 43   | 55   | 4       | 8    | 22.5      | 5       | 12   | 5                                  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 3 FT |                     |    |    |    |               |      |         |      |      |       |         |      |      |      |         |      |      |      |         |    |                  |       |      |      |         |      |      | HEIGHT (HT) = 5 FT OR 6 FT |         |    |         |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|------|------|------|---------|------|------|------|---------|----|------------------|-------|------|------|---------|------|------|----------------------------|---------|----|---------|----|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |      |      |      |         |      |      |      |         |    | BOTTOM SLAB BARS |       |      |      |         |      |      |                            |         |    |         |    | WALL BARS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      |      |      | H2 BARS |      |      |      | A2 BARS |    | J4 BARS          |       |      |      | H3 BARS |      |      |                            | B1 BARS |    | B2 BARS |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS | TX | T1 | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         | SIZE | SPA. | C5   | SIZE    | SPA. | C6   | SIZE | SPA.    | C4 | K3               |       | SIZE | SPA. | C7      | SIZE | SPA. | SIZE                       | SPA.    | G1 |         |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    |               |      |         |      |      | HT=5' | HT=6'   |      |      |      |         |      |      |      |         |    | HT=5'            | HT=6' |      |      |         |      |      |                            |         |    |         |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 10                  | 8  | 8  | 8  | 4             | 8.5  | 4       | 10.5 | 23.8 | 26.0  | 26.0    | 4    | 24   | 39.5 | 4       | 24   | 16.0 | 4    | 12      | 4  | 11.5             | 39.0  | 64   | 76   | 4       | 12   | 24.5 | 5                          | 12      | 5  | 12      | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 10                  | 8  | 8  | 8  | 4             | 8.5  | 4       | 10.5 | 23.8 | 26.0  | 26.0    | 4    | 24   | 39.5 | 4       | 24   | 16.0 | 4    | 12      | 4  | 11               | 39.9  | 64   | 76   | 4       | 11.5 | 24.5 | 5                          | 12      | 5  | 12      | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 23.8 | 24.0  | 24.0    | 4    | 24   | 39.5 | 4       | 24   | 15.0 | 4    | 12      | 4  | 10               | 38.6  | 64   | 76   | 4       | 12   | 23.5 | 5                          | 12      | 5  | 12      | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 36.9 | 24.0  | 24.0    | 4    | 24   | 25.0 | 4       | 24   | 14.5 | 4    | 12      | 4  | 9.5              | 36.9  | 64   | 76   | 4       | 12   | 23.0 | 5                          | 12      | 5  | 12      | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 38.6 | 24.0  | 24.0    | 4    | 24   | 23.5 | 4       | 24   | 15.0 | 4    | 12      | 4  | 9                | 35.8  | 64   | 76   | 4       | 12   | 23.0 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 33.1 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 14.0 | 4    | 12      | 4  | 9.5              | 32.8  | 64   | 76   | 4       | 12   | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 32.8 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 15.0 | 4    | 12      | 4  | 9                | 32.5  | 64   | 76   | 4       | 12   | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 11   | 32.4 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 16.0 | 4    | 12      | 4  | 8.5              | 32.3  | 64   | 76   | 4       | 12   | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 10   | 32.1 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 16.5 | 4    | 12      | 4  | 8                | 32.1  | 64   | 76   | 4       | 11.5 | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 9    | 32.0 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 17.0 | 4    | 12      | 4  | 7.5              | 32.0  | 64   | 76   | 4       | 11   | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 8    | 31.8 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 17.0 | 4    | 12      | 4  | 7                | 31.9  | 64   | 76   | 4       | 10   | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 7.5  | 31.6 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 17.5 | 4    | 12      | 4  | 6.5              | 31.8  | 64   | 76   | 4       | 9.5  | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 7    | 31.6 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 17.5 | 4    | 12      | 4  | 6                | 31.6  | 64   | 76   | 4       | 9.5  | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 6.5  | 31.5 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 17.5 | 4    | 11.5    | 5  | 6.5              | 31.6  | 64   | 76   | 4       | 9    | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 6    | 31.5 | 24.0  | 24.0    | 4    | 24   | 21.5 | 4       | 24   | 17.5 | 4    | 10.5    | 5  | 6                | 31.5  | 64   | 76   | 4       | 8.5  | 22.5 | 5                          | 12      | 5  | 12      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 8                   | 9  | 8  | 8  | 4             | 12   | 5       | 6.5  | 31.3 | 24.0  | 28.0    | 4    | 24   | 21.5 | 4       | 24   | 17.5 | 4    | 11.5    | 5  | 6.5              | 32.8  | 65   | 77   | 4       | 10   | 22.5 | 5                          | 12      | 5  | 11.5    | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 8                   | 9  | 8  | 8  | 4             | 11   | 5       | 6    | 31.3 | 24.0  | 28.0    | 4    | 24   | 21.5 | 4       | 24   | 17.5 | 4    | 11      | 5  | 6                | 32.6  | 65   | 77   | 4       | 9.5  | 22.5 | 5                          | 12      | 5  | 11      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 8                   | 9  | 8  | 8  | 4             | 10.5 | 5       | 6    | 31.3 | 24.0  | 28.0    | 4    | 23   | 21.5 | 4       | 23   | 17.5 | 4    | 10      | 5  | 6                | 32.6  | 65   | 77   | 4       | 9    | 22.5 | 5                          | 12      | 5  | 10.5    | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 8                   | 10 | 8  | 8  | 4             | 10   | 6       | 7.5  | 34.1 | 24.0  | 28.0    | 4    | 22   | 21.5 | 4       | 22   | 17.5 | 4    | 11      | 5  | 6                | 33.5  | 66   | 78   | 4       | 10.5 | 22.5 | 5                          | 12      | 5  | 10      | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 8                   | 10 | 8  | 8  | 4             | 9.5  | 6       | 7.5  | 34.1 | 24.0  | 28.0    | 4    | 21   | 21.5 | 4       | 21   | 17.5 | 4    | 10.5    | 5  | 6                | 33.5  | 66   | 78   | 4       | 10   | 22.5 | 5                          | 12      | 5  | 9.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 9                   | 10 | 8  | 8  | 4             | 10   | 5       | 6    | 31.9 | 25.0  | 29.0    | 4    | 24   | 21.0 | 4       | 24   | 17.5 | 4    | 10      | 6  | 7                | 36.4  | 66   | 78   | 4       | 9.5  | 22.5 | 5                          | 12      | 5  | 9.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 9                   | 10 | 8  | 8  | 4             | 9.5  | 5       | 6    | 31.9 | 25.0  | 29.0    | 4    | 23   | 21.0 | 4       | 23   | 17.5 | 4    | 9.5     | 6  | 7                | 36.3  | 66   | 78   | 4       | 9    | 22.5 | 5                          | 12      | 5  | 9.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 9                   | 10 | 8  | 8  | 4             | 9    | 6       | 7    | 34.9 | 25.0  | 33.0    | 4    | 22   | 21.0 | 4       | 22   | 17.5 | 4    | 9       | 6  | 6.5              | 36.3  | 66   | 78   | 4       | 8.5  | 22.5 | 5                          | 12      | 5  | 9.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 10                  | 11 | 8  | 8  | 4             | 9.5  | 5       | 6    | 32.8 | 26.0  | 30.0    | 4    | 24   | 20.5 | 4       | 24   | 17.0 | 4    | 10      | 6  | 7                | 36.9  | 67   | 79   | 4       | 9.5  | 22.5 | 5                          | 12      | 5  | 9.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 10                  | 11 | 8  | 8  | 4             | 9    | 6       | 7    | 35.8 | 26.0  | 34.0    | 4    | 24   | 20.5 | 4       | 24   | 17.5 | 4    | 9.5     | 6  | 6.5              | 36.9  | 67   | 79   | 4       | 9    | 22.5 | 5                          | 12      | 5  | 9.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 10                  | 11 | 8  | 8  | 4             | 8.5  | 6       | 7    | 35.6 | 26.0  | 34.0    | 4    | 24   | 20.5 | 4       | 24   | 17.5 | 4    | 9       | 6  | 6.5              | 36.9  | 67   | 79   | 4       | 9    | 22.5 | 5                          | 12      | 5  | 9.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 4 FT |                     |    |    |    |               |      |         |      |      |       |         |      |         |      |         |      |         |      |                  |    |         |       |         |      |         |      |      |      | HEIGHT (HT) = 2 FT OR 3 FT |    |    |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|------|---------|------|---------|------|---------|------|------------------|----|---------|-------|---------|------|---------|------|------|------|----------------------------|----|----|----|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |      |         |      |         |      |         |      | BOTTOM SLAB BARS |    |         |       |         |      |         |      |      |      |                            |    |    |    | WALL BARS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      | H2 BARS |      | A2 BARS |      | J4 BARS |      |                  |    | H3 BARS |       | B1 BARS |      | B2 BARS |      |      |      |                            |    |    |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         | SIZE | SPA.    | C5   | SIZE    | SPA. | C6      | SIZE | SPA.             | C4 | K3      |       | SIZE    | SPA. | C7      | SIZE | SPA. | SIZE | SPA.                       | G1 |    |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    |               |      |         |      |      | HT=2' | HT=3'   |      |         |      |         |      |         |      |                  |    | HT=2'   | HT=3' |         |      |         |      |      |      |                            |    |    |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 10                  | 8  | 8  | 8  | 4             | 7    | 4       | 10.5 | 27.3 | 26.0  | 26.0    | 4    | 23      | 48.0 | 4       | 23   | 20.5    | 4    | 12               | 4  | 12      | 29.3  | 28      | 40   | 4       | 9.5  | 28.0 | 5    | 12                         | 5  | 12 | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 10                  | 8  | 8  | 8  | 4             | 7    | 4       | 10.5 | 27.3 | 26.0  | 26.0    | 4    | 23      | 48.0 | 4       | 23   | 20.0    | 4    | 12               | 4  | 12      | 27.3  | 28      | 40   | 4       | 9    | 27.5 | 5    | 12                         | 5  | 12 | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 26.3 | 24.0  | 24.0    | 4    | 24      | 34.0 | 4       | 24   | 19.0    | 4    | 12               | 4  | 12      | 25.0  | 28      | 40   | 4       | 9.5  | 27.0 | 5    | 12                         | 5  | 12 | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.8 | 24.0  | 24.0    | 4    | 24      | 28.5 | 4       | 24   | 19.0    | 4    | 12               | 4  | 12      | 24.0  | 28      | 40   | 4       | 9.5  | 26.5 | 5    | 12                         | 5  | 12 | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.1 | 24.0  | 24.0    | 4    | 24      | 27.0 | 4       | 24   | 19.0    | 4    | 12               | 4  | 12      | 23.4  | 28      | 40   | 4       | 9    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 22.6 | 24.0  | 24.0    | 4    | 24      | 25.5 | 4       | 24   | 18.5    | 4    | 12               | 4  | 12      | 22.1  | 28      | 40   | 4       | 9    | 25.5 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 22.5 | 24.0  | 24.0    | 4    | 24      | 25.5 | 4       | 24   | 18.5    | 4    | 12               | 4  | 12      | 22.1  | 28      | 40   | 4       | 8    | 25.5 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 22.5 | 24.0  | 24.0    | 4    | 22      | 25.5 | 4       | 22   | 18.5    | 4    | 12               | 4  | 12      | 22.1  | 28      | 40   | 4       | 7.5  | 25.5 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 22.5 | 24.0  | 24.0    | 4    | 20      | 25.5 | 4       | 20   | 18.5    | 4    | 11               | 4  | 12      | 22.1  | 28      | 40   | 4       | 7    | 25.5 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 22.5 | 24.0  | 24.0    | 4    | 18      | 25.5 | 4       | 18   | 18.5    | 4    | 10               | 4  | 11.5    | 22.0  | 28      | 40   | 4       | 6.5  | 25.5 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 8                   | 8  | 8  | 8  | 4             | 10.5 | 4       | 11.5 | 22.5 | 24.0  | 24.0    | 4    | 17      | 25.5 | 4       | 17   | 18.5    | 4    | 9                | 4  | 10.5    | 22.0  | 28      | 40   | 4       | 6    | 25.5 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 8                   | 9  | 8  | 8  | 4             | 10   | 4       | 10.5 | 22.6 | 24.0  | 24.0    | 4    | 15      | 25.5 | 4       | 15   | 18.5    | 4    | 9                | 4  | 12      | 21.4  | 29      | 41   | 4       | 6.5  | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 8                   | 9  | 8  | 8  | 4             | 9    | 4       | 9.5  | 22.6 | 24.0  | 24.0    | 4    | 14      | 25.5 | 4       | 14   | 18.5    | 4    | 8.5              | 4  | 12      | 21.4  | 29      | 41   | 4       | 6    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 8                   | 10 | 8  | 8  | 4             | 8.5  | 4       | 8.5  | 22.8 | 24.0  | 24.0    | 4    | 13      | 25.5 | 4       | 13   | 18.5    | 4    | 8.5              | 4  | 12      | 20.9  | 30      | 42   | 4       | 6.5  | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 8                   | 10 | 8  | 8  | 4             | 7.5  | 4       | 8    | 22.8 | 24.0  | 24.0    | 4    | 12      | 25.5 | 4       | 12   | 18.5    | 4    | 8                | 4  | 12      | 20.9  | 30      | 42   | 4       | 6.5  | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 9                   | 10 | 8  | 8  | 4             | 8    | 4       | 10.5 | 22.3 | 25.0  | 25.0    | 4    | 13      | 25.5 | 4       | 13   | 18.5    | 4    | 7.5              | 4  | 12      | 21.0  | 30      | 42   | 4       | 6    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 9                   | 11 | 8  | 8  | 4             | 7.5  | 4       | 10   | 22.4 | 25.0  | 25.0    | 4    | 12      | 25.5 | 4       | 12   | 18.5    | 4    | 8                | 4  | 10.5    | 20.6  | 31      | 43   | 4       | 6.5  | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 10                  | 11 | 8  | 8  | 4             | 7.5  | 4       | 10.5 | 22.0 | 26.0  | 26.0    | 4    | 13      | 25.0 | 4       | 13   | 18.5    | 4    | 7.5              | 4  | 10.5    | 20.9  | 31      | 43   | 4       | 6    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 10                  | 12 | 8  | 8  | 4             | 7.5  | 4       | 10   | 22.1 | 26.0  | 26.0    | 4    | 12      | 25.0 | 4       | 12   | 18.5    | 4    | 7.5              | 4  | 9.5     | 20.6  | 32      | 44   | 4       | 6.5  | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 10                  | 12 | 8  | 8  | 4             | 7    | 4       | 9.5  | 22.1 | 26.0  | 26.0    | 4    | 12      | 25.0 | 4       | 12   | 18.5    | 4    | 7.5              | 4  | 9.5     | 20.6  | 32      | 44   | 4       | 6    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 11                  | 12 | 8  | 8  | 4             | 7    | 4       | 9.5  | 21.8 | 27.0  | 27.0    | 4    | 13      | 25.0 | 4       | 13   | 18.5    | 4    | 7                | 4  | 9.5     | 20.9  | 32      | 44   | 4       | 6    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 11                  | 13 | 8  | 8  | 4             | 6.5  | 4       | 9.5  | 21.9 | 27.0  | 27.0    | 4    | 12      | 25.0 | 4       | 12   | 18.5    | 4    | 7                | 4  | 8.5     | 20.6  | 33      | 45   | 4       | 6    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 11                  | 13 | 8  | 8  | 4             | 6.5  | 4       | 9    | 21.9 | 27.0  | 27.0    | 4    | 12      | 25.0 | 4       | 12   | 18.5    | 4    | 7                | 4  | 8.5     | 20.6  | 33      | 45   | 4       | 6    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 12                  | 13 | 8  | 8  | 4             | 6.5  | 4       | 8.5  | 21.6 | 28.0  | 28.0    | 4    | 12      | 24.5 | 4       | 12   | 18.5    | 4    | 6.5              | 4  | 8.5     | 20.9  | 33      | 45   | 5       | 8.5  | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 12                  | 13 | 8  | 8  | 4             | 6.5  | 4       | 8.5  | 21.6 | 28.0  | 28.0    | 4    | 12      | 24.5 | 4       | 12   | 18.5    | 4    | 6                | 4  | 8.5     | 20.9  | 33      | 45   | 5       | 8.5  | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 12                  | 14 | 8  | 8  | 4             | 6    | 4       | 8.5  | 21.8 | 28.0  | 28.0    | 4    | 12      | 24.5 | 4       | 12   | 18.5    | 4    | 6.5              | 4  | 7.5     | 20.8  | 34      | 46   | 5       | 9    | 26.0 | 5    | 12                         | 5  | 12 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

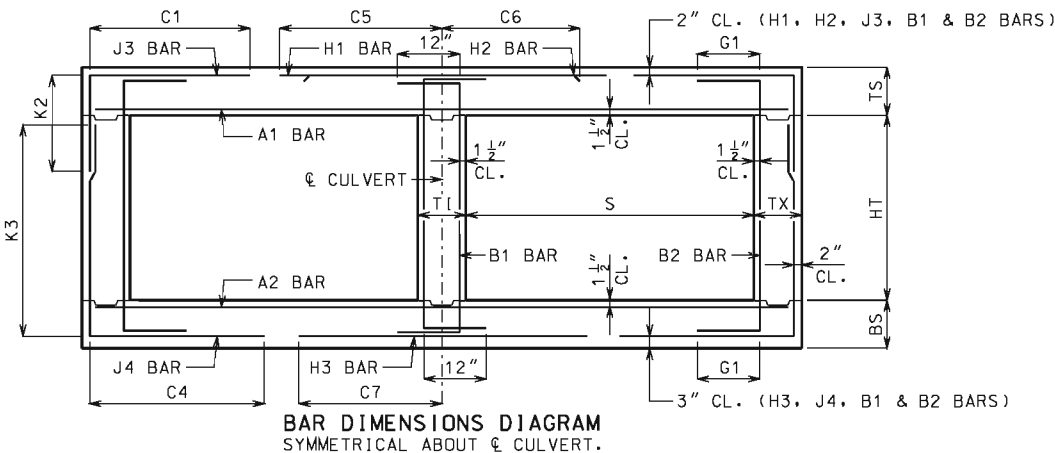
| SPAN (S) = 4 FT |                     |    |    |    |               |      |         |      |      |       |         |      |      |      |         |      |         |      |                  |    |       |       |         |      |         |      |         |      | HEIGHT (HT) = 4 FT OR 5 FT |    |      |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|------|------|------|---------|------|---------|------|------------------|----|-------|-------|---------|------|---------|------|---------|------|----------------------------|----|------|----|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |      |      |      |         |      |         |      | BOTTOM SLAB BARS |    |       |       |         |      |         |      |         |      |                            |    |      |    | WALL BARS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      |      |      | H2 BARS |      | A2 BARS |      | J4 BARS          |    |       |       | H3 BARS |      | B1 BARS |      | B2 BARS |      |                            |    |      |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         | SIZE | SPA. | C5   | SIZE    | SPA. | C6      | SIZE | SPA.             | C4 | K3    |       | SIZE    | SPA. | C7      | SIZE | SPA.    | SIZE | SPA.                       | G1 |      |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    |               |      |         |      |      | HT=4' | HT=5'   |      |      |      |         |      |         |      |                  |    | HT=4' | HT=5' |         |      |         |      |         |      |                            |    |      |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 10                  | 8  | 8  | 8  | 4             | 7    | 4       | 10.5 | 27.3 | 26.0  | 26.0    | 4    | 23   | 48.0 | 4       | 23   | 20.5    | 4    | 12               | 4  | 12    | 39.9  | 52      | 64   | 4       | 9    | 28.0    | 5    | 12                         | 5  | 12   | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 10                  | 8  | 8  | 8  | 4             | 7    | 4       | 10.5 | 27.3 | 26.0  | 26.0    | 4    | 23   | 48.0 | 4       | 23   | 20.5    | 4    | 12               | 4  | 12    | 36.8  | 52      | 64   | 4       | 9    | 27.5    | 5    | 12                         | 5  | 12   | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 27.3 | 24.0  | 24.0    | 4    | 24   | 48.0 | 4       | 24   | 19.5    | 4    | 12               | 4  | 12    | 33.8  | 52      | 64   | 4       | 9    | 27.0    | 5    | 12                         | 5  | 12   | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 33.5 | 24.0  | 24.0    | 4    | 24   | 28.5 | 4       | 24   | 19.0    | 4    | 12               | 4  | 11.5  | 31.3  | 52      | 64   | 4       | 9    | 26.5    | 5    | 12                         | 5  | 12   | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 30.6 | 24.0  | 24.0    | 4    | 24   | 27.0 | 4       | 24   | 19.0    | 4    | 12               | 4  | 11    | 29.9  | 52      | 64   | 4       | 8.5  | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 27.4 | 24.0  | 24.0    | 4    | 24   | 25.5 | 4       | 24   | 18.5    | 4    | 12               | 4  | 12    | 27.1  | 52      | 64   | 4       | 9    | 25.5    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 27.1 | 24.0  | 24.0    | 4    | 24   | 25.5 | 4       | 24   | 18.5    | 4    | 12               | 4  | 11    | 26.9  | 52      | 64   | 4       | 8    | 25.5    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 27.0 | 24.0  | 24.0    | 4    | 22   | 25.0 | 4       | 22   | 18.5    | 4    | 12               | 4  | 10.5  | 26.8  | 52      | 64   | 4       | 7.5  | 25.5    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 11   | 26.9 | 24.0  | 24.0    | 4    | 21   | 25.0 | 4       | 21   | 18.5    | 4    | 10.5             | 4  | 10    | 26.6  | 52      | 64   | 4       | 7    | 25.5    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 8                   | 8  | 8  | 8  | 4             | 11.5 | 4       | 10   | 26.8 | 24.0  | 24.0    | 4    | 19   | 25.0 | 4       | 19   | 18.5    | 4    | 9.5              | 4  | 9     | 26.6  | 52      | 64   | 4       | 6.5  | 25.5    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 8                   | 8  | 8  | 8  | 4             | 10.5 | 4       | 9    | 26.6 | 24.0  | 24.0    | 4    | 17   | 25.0 | 4       | 17   | 18.5    | 4    | 8.5              | 4  | 8     | 26.5  | 52      | 64   | 4       | 6    | 25.5    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 8                   | 9  | 8  | 8  | 4             | 9.5  | 4       | 8    | 26.8 | 24.0  | 24.0    | 4    | 15   | 25.0 | 4       | 15   | 18.5    | 4    | 9                | 4  | 9.5   | 26.8  | 53      | 65   | 4       | 6.5  | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 8                   | 9  | 8  | 8  | 4             | 9    | 4       | 7.5  | 26.6 | 24.0  | 24.0    | 4    | 14   | 25.0 | 4       | 14   | 18.5    | 4    | 8.5              | 4  | 9     | 26.6  | 53      | 65   | 4       | 6.5  | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 8                   | 10 | 8  | 8  | 4             | 8.5  | 4       | 6.5  | 26.6 | 24.0  | 24.0    | 4    | 13   | 25.0 | 4       | 13   | 18.5    | 4    | 8.5              | 4  | 10.5  | 26.9  | 54      | 66   | 4       | 7    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 8                   | 10 | 8  | 8  | 4             | 7.5  | 4       | 6    | 26.6 | 24.0  | 24.0    | 4    | 12   | 25.0 | 4       | 12   | 18.5    | 4    | 8                | 4  | 10    | 26.9  | 54      | 66   | 4       | 6.5  | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 9                   | 10 | 8  | 8  | 4             | 8    | 4       | 7.5  | 26.8 | 25.0  | 25.0    | 4    | 13   | 25.0 | 4       | 13   | 18.5    | 4    | 7                | 4  | 9     | 26.9  | 54      | 66   | 4       | 6    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 9                   | 11 | 8  | 8  | 4             | 7.5  | 4       | 6.5  | 26.9 | 25.0  | 25.0    | 4    | 12   | 25.0 | 4       | 12   | 18.5    | 4    | 8                | 4  | 9     | 27.1  | 55      | 67   | 4       | 6.5  | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 10                  | 11 | 8  | 8  | 4             | 7.5  | 4       | 6.5  | 27.0 | 26.0  | 26.0    | 4    | 14   | 24.5 | 4       | 14   | 18.5    | 4    | 7.5              | 4  | 8.5   | 27.1  | 55      | 67   | 4       | 6    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 10                  | 12 | 8  | 8  | 4             | 7.5  | 4       | 6.5  | 27.1 | 26.0  | 26.0    | 4    | 13   | 24.5 | 4       | 13   | 18.5    | 4    | 8                | 4  | 8.5   | 27.4  | 56      | 68   | 4       | 6.5  | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 10                  | 12 | 8  | 8  | 4             | 7    | 4       | 6    | 27.1 | 26.0  | 26.0    | 4    | 12   | 24.5 | 4       | 12   | 18.5    | 4    | 7.5              | 4  | 8     | 27.4  | 56      | 68   | 4       | 6    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 11                  | 12 | 8  | 8  | 4             | 7    | 4       | 6    | 27.3 | 27.0  | 27.0    | 4    | 14   | 24.5 | 4       | 14   | 18.5    | 4    | 7                | 4  | 7.5   | 27.5  | 56      | 68   | 4       | 6    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 11                  | 13 | 8  | 8  | 4             | 7    | 5       | 9    | 27.3 | 27.0  | 27.0    | 4    | 13   | 24.5 | 4       | 13   | 18.5    | 4    | 7.5              | 4  | 7.5   | 27.8  | 57      | 69   | 4       | 6    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 11                  | 13 | 8  | 8  | 4             | 6.5  | 5       | 8.5  | 27.3 | 27.0  | 27.0    | 4    | 12   | 24.5 | 4       | 12   | 18.5    | 4    | 7                | 4  | 7.5   | 27.6  | 57      | 69   | 4       | 6    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 11                  | 13 | 8  | 8  | 4             | 6    | 5       | 8.5  | 27.3 | 27.0  | 27.0    | 4    | 12   | 24.5 | 4       | 12   | 18.5    | 4    | 6.5              | 4  | 7     | 27.6  | 57      | 69   | 5       | 9    | 26.0    | 5    | 12                         | 5  | 12   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 12                  | 13 | 8  | 8  | 4             | 6.5  | 5       | 8.5  | 27.4 | 28.0  | 28.0    | 4    | 13   | 24.0 | 4       | 13   | 18.5    | 4    | 6.5              | 4  | 6.5   | 27.8  | 57      | 69   | 5       | 8.5  | 26.0    | 5    | 12                         | 5  | 11.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 12                  | 14 | 8  | 8  | 4             | 6    | 5       | 8.5  | 27.5 | 28.0  | 28.0    | 4    | 13   | 23.5 | 4       | 13   | 18.0    | 4    | 7                | 4  | 6.5   | 28.0  | 58      | 70   | 4       | 6    | 25.5    | 5    | 12                         | 5  | 11   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| SPAN (S) = 5 FT |                     |    |    |    |               |      |         |      |      |       |         |      |         |      |         |      |                  |      |      |    |         |       |         |      |         |      | HEIGHT (HT) = 3 FT OR 4 FT |      |           |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|------|---------|------|---------|------|------------------|------|------|----|---------|-------|---------|------|---------|------|----------------------------|------|-----------|----|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |      |         |      |         |      | BOTTOM SLAB BARS |      |      |    |         |       |         |      |         |      |                            |      | WALL BARS |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |       | B1 BARS |      | B2 BARS |      |                            |      |           |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         | SIZE | SPA.    | C5   | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | K3      |       | SIZE    | SPA. | C7      | SIZE | SPA.                       | SIZE | SPA.      | G1 |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    |               |      |         |      |      | HT=3' | HT=4'   |      |         |      |         |      |                  |      |      |    | HT=3'   | HT=4' |         |      |         |      |                            |      |           |    |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 11                  | 8  | 8  | 8  | 4             | 6.5  | 4       | 9.5  | 30.9 | 27.0  | 27.0    | 4    | 20      | 56.0 | 4       | 20   | 21.5             | 4    | 12   | 4  | 12      | 33.3  | 40      | 52   | 4       | 7.5  | 31.0                       | 5    | 12        | 5  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 11                  | 8  | 8  | 8  | 4             | 6.5  | 4       | 9.5  | 30.9 | 27.0  | 27.0    | 4    | 19      | 56.0 | 4       | 19   | 21.5             | 4    | 11.5 | 4  | 11.5    | 31.0  | 40      | 52   | 4       | 7    | 31.0                       | 5    | 12        | 5  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 8  | 8  | 8  | 4             | 11   | 4       | 12   | 30.0 | 24.0  | 24.0    | 4    | 18      | 39.0 | 4       | 18   | 20.0             | 4    | 12   | 4  | 12      | 28.4  | 40      | 52   | 4       | 7    | 30.0                       | 5    | 12        | 5  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 27.4 | 24.0  | 24.0    | 4    | 19      | 32.0 | 4       | 19   | 20.0             | 4    | 11.5 | 4  | 12      | 26.9  | 40      | 52   | 4       | 7    | 29.5                       | 5    | 12        | 5  | 12 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 26.6 | 24.0  | 24.0    | 4    | 18      | 30.5 | 4       | 18   | 19.5             | 4    | 10.5 | 4  | 11.5    | 26.0  | 40      | 52   | 4       | 6.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                   | 8  | 8  | 8  | 4             | 11   | 4       | 12   | 26.1 | 24.0  | 24.0    | 4    | 16      | 29.5 | 4       | 16   | 19.5             | 4    | 9.5  | 4  | 10.5    | 25.5  | 40      | 52   | 4       | 6    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                   | 8  | 8  | 8  | 4             | 12   | 4       | 12   | 24.6 | 24.0  | 24.0    | 4    | 16      | 28.5 | 4       | 16   | 19.0             | 4    | 9.5  | 4  | 11      | 24.4  | 40      | 52   | 5       | 7.5  | 28.5                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                   | 8  | 8  | 8  | 4             | 10   | 4       | 11   | 24.6 | 24.0  | 24.0    | 4    | 14      | 28.5 | 4       | 14   | 19.0             | 4    | 8.5  | 4  | 10      | 24.3  | 40      | 52   | 5       | 7    | 28.5                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                   | 9  | 8  | 8  | 4             | 9    | 4       | 9.5  | 24.8 | 24.0  | 24.0    | 4    | 12      | 28.5 | 4       | 12   | 19.0             | 4    | 8.5  | 4  | 12      | 23.5  | 41      | 53   | 5       | 7.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 8                   | 9  | 8  | 8  | 4             | 8    | 4       | 8.5  | 24.8 | 24.0  | 24.0    | 5    | 17      | 28.5 | 5       | 17   | 19.5             | 4    | 7.5  | 4  | 11.5    | 23.5  | 41      | 53   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 8                   | 10 | 8  | 8  | 4             | 7.5  | 4       | 7.5  | 24.9 | 24.0  | 24.0    | 5    | 17      | 28.0 | 5       | 17   | 20.0             | 4    | 7.5  | 4  | 12      | 22.9  | 42      | 54   | 5       | 7.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 9                   | 10 | 8  | 8  | 4             | 7    | 4       | 9    | 24.3 | 25.0  | 25.0    | 5    | 16      | 28.5 | 5       | 16   | 19.0             | 4    | 7    | 4  | 12      | 23.1  | 42      | 54   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 9                   | 11 | 8  | 8  | 4             | 6.5  | 4       | 8    | 24.5 | 25.0  | 25.0    | 5    | 16      | 28.5 | 5       | 16   | 20.0             | 4    | 7    | 4  | 10.5    | 22.8  | 43      | 55   | 5       | 7.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 10                  | 11 | 8  | 8  | 4             | 6.5  | 4       | 8.5  | 24.0 | 26.0  | 26.0    | 5    | 16      | 28.5 | 5       | 16   | 19.0             | 4    | 6.5  | 4  | 10.5    | 23.0  | 43      | 55   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 10                  | 12 | 8  | 8  | 4             | 6.5  | 4       | 8    | 24.1 | 26.0  | 26.0    | 5    | 15      | 28.0 | 5       | 15   | 19.5             | 4    | 6.5  | 4  | 9.5     | 22.6  | 44      | 56   | 5       | 7.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 11                  | 12 | 8  | 8  | 4             | 6.5  | 4       | 8.5  | 23.8 | 27.0  | 27.0    | 5    | 15      | 28.0 | 5       | 15   | 19.0             | 4    | 6    | 4  | 9.5     | 22.9  | 44      | 56   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 11                  | 13 | 8  | 8  | 4             | 6    | 4       | 7.5  | 23.9 | 27.0  | 27.0    | 5    | 15      | 28.0 | 5       | 15   | 19.0             | 4    | 6.5  | 4  | 8.5     | 22.8  | 45      | 57   | 5       | 7.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 12                  | 13 | 8  | 8  | 4             | 6    | 4       | 8.5  | 23.6 | 28.0  | 28.0    | 5    | 15      | 28.0 | 5       | 15   | 19.0             | 4    | 6    | 4  | 8.5     | 22.9  | 45      | 57   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 12                  | 14 | 8  | 8  | 5             | 9    | 4       | 7.5  | 23.8 | 28.0  | 28.0    | 5    | 15      | 28.0 | 5       | 15   | 19.0             | 4    | 6    | 4  | 7.5     | 22.8  | 46      | 58   | 5       | 7.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 13                  | 14 | 8  | 8  | 5             | 9    | 4       | 7.5  | 23.5 | 29.0  | 29.0    | 5    | 15      | 27.5 | 5       | 15   | 19.0             | 4    | 6    | 4  | 7.5     | 23.0  | 46      | 58   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 13                  | 15 | 8  | 8  | 5             | 8.5  | 4       | 7.5  | 23.8 | 29.0  | 29.0    | 5    | 15      | 27.5 | 5       | 15   | 19.0             | 4    | 6    | 4  | 7       | 22.9  | 47      | 59   | 5       | 7.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 13                  | 15 | 8  | 8  | 5             | 8    | 4       | 7    | 23.8 | 29.0  | 29.0    | 5    | 14      | 27.5 | 5       | 14   | 19.0             | 5    | 9    | 4  | 7       | 22.9  | 47      | 59   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 14                  | 15 | 8  | 8  | 5             | 8.5  | 4       | 7    | 23.5 | 30.0  | 30.0    | 5    | 15      | 27.0 | 5       | 15   | 19.0             | 5    | 8.5  | 4  | 7       | 23.1  | 47      | 59   | 5       | 6.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 14                  | 16 | 8  | 8  | 5             | 8    | 4       | 7    | 23.6 | 30.0  | 30.0    | 5    | 14      | 27.0 | 5       | 14   | 19.0             | 5    | 9    | 4  | 6.5     | 23.1  | 48      | 60   | 5       | 7    | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 14                  | 16 | 8  | 8  | 5             | 7.5  | 4       | 6.5  | 23.6 | 30.0  | 30.0    | 5    | 14      | 27.0 | 5       | 14   | 19.0             | 5    | 8.5  | 4  | 6.5     | 23.1  | 48      | 60   | 5       | 6.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 15                  | 16 | 8  | 8  | 5             | 7.5  | 4       | 6.5  | 25.6 | 31.0  | 31.0    | 5    | 15      | 31.5 | 5       | 15   | 24.0             | 5    | 8    | 4  | 6.5     | 23.3  | 48      | 60   | 5       | 6.5  | 29.0                       | 5    | 12        | 5  | 12 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 5 FT |                  |    |    |    |               |      |         |      |      |       |         |      |         |      |         |      |                  |      |      |    |         |       |         |      |         |      |      |      |           | HEIGHT (HT) = 5 FT OR 6 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|-------|---------|------|---------|------|---------|------|------------------|------|------|----|---------|-------|---------|------|---------|------|------|------|-----------|----------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |      |         |      |         |      | BOTTOM SLAB BARS |      |      |    |         |       |         |      |         |      |      |      | WALL BARS |                            |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |       | B1 BARS |      | B2 BARS |      |      |      |           |                            |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         | SIZE | SPA.    | C5   | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | K3      |       | SIZE    | SPA. | C7      | SIZE | SPA. | SIZE | SPA.      | G1                         |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=5' | HT=6'   |      |         |      |         |      |                  |      |      |    | HT=5'   | HT=6' |         |      |         |      |      |      |           |                            |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 11               | 8  | 8  | 8  | 4             | 6    | 4       | 9.5  | 30.9 | 27.0  | 27.0    | 4    | 20      | 56.0 | 4       | 20   | 22.0             | 4    | 11.5 | 4  | 9.5     | 44.1  | 64      | 76   | 4       | 7    | 31.0 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 11               | 8  | 8  | 8  | 4             | 6    | 4       | 9.5  | 30.9 | 27.0  | 27.0    | 4    | 19      | 56.0 | 4       | 19   | 21.5             | 4    | 10.5 | 4  | 9       | 40.6  | 64      | 76   | 4       | 7    | 31.0 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                | 8  | 8  | 8  | 4             | 10.5 | 4       | 10.5 | 30.9 | 24.0  | 24.0    | 4    | 18      | 56.0 | 4       | 18   | 20.0             | 4    | 11.5 | 4  | 9       | 37.6  | 64      | 76   | 4       | 7    | 30.0 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 10.5 | 37.1 | 24.0  | 24.0    | 4    | 19      | 32.0 | 4       | 19   | 20.0             | 4    | 11   | 4  | 8.5     | 34.6  | 64      | 76   | 4       | 6.5  | 29.5 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                | 8  | 8  | 8  | 4             | 12   | 4       | 10   | 33.8 | 24.0  | 24.0    | 4    | 18      | 30.5 | 4       | 18   | 19.5             | 4    | 10   | 4  | 8       | 33.0  | 64      | 76   | 4       | 6    | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                | 8  | 8  | 8  | 4             | 11   | 4       | 9    | 32.3 | 24.0  | 24.0    | 4    | 16      | 29.5 | 4       | 16   | 19.5             | 4    | 9    | 4  | 7.5     | 31.9  | 64      | 76   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                | 8  | 8  | 8  | 4             | 11.5 | 4       | 9.5  | 29.5 | 24.0  | 24.0    | 4    | 16      | 28.5 | 4       | 16   | 19.0             | 4    | 9    | 4  | 7.5     | 29.4  | 64      | 76   | 5       | 7.5  | 28.5 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                | 8  | 8  | 8  | 4             | 10   | 4       | 8    | 29.3 | 24.0  | 24.0    | 4    | 14      | 28.5 | 4       | 14   | 19.0             | 4    | 8    | 4  | 7       | 29.1  | 64      | 76   | 5       | 7    | 28.5 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                | 9  | 8  | 8  | 4             | 9    | 4       | 7    | 29.3 | 24.0  | 24.0    | 4    | 12      | 28.0 | 4       | 12   | 19.0             | 4    | 8    | 4  | 8       | 29.3  | 65      | 77   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 8                | 9  | 8  | 8  | 4             | 8    | 4       | 6.5  | 29.1 | 24.0  | 24.0    | 5    | 17      | 28.0 | 5       | 17   | 19.5             | 4    | 7    | 4  | 7.5     | 29.1  | 65      | 77   | 5       | 7    | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 8                | 10 | 8  | 8  | 4             | 7    | 5       | 7    | 29.0 | 24.0  | 24.0    | 5    | 17      | 28.0 | 5       | 17   | 20.0             | 4    | 7.5  | 4  | 8.5     | 29.3  | 66      | 78   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 9                | 10 | 8  | 8  | 4             | 7    | 4       | 6.5  | 29.1 | 25.0  | 25.0    | 5    | 16      | 28.0 | 5       | 16   | 19.0             | 4    | 7    | 4  | 7.5     | 29.3  | 66      | 78   | 5       | 7    | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 9                | 11 | 8  | 8  | 4             | 6.5  | 4       | 6    | 29.1 | 25.0  | 25.0    | 5    | 16      | 28.0 | 5       | 16   | 19.5             | 4    | 7    | 4  | 7.5     | 29.5  | 67      | 79   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 10               | 11 | 8  | 8  | 4             | 6.5  | 5       | 8    | 29.3 | 26.0  | 26.0    | 5    | 16      | 28.0 | 5       | 16   | 19.0             | 4    | 6.5  | 4  | 6.5     | 29.5  | 67      | 79   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 10               | 12 | 8  | 8  | 4             | 6.5  | 5       | 7.5  | 29.3 | 26.0  | 26.0    | 5    | 15      | 28.0 | 5       | 15   | 19.0             | 4    | 6.5  | 4  | 6.5     | 29.6  | 68      | 80   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 11               | 12 | 8  | 8  | 4             | 6.5  | 5       | 8.5  | 29.4 | 27.0  | 27.0    | 5    | 16      | 27.5 | 5       | 16   | 19.0             | 4    | 6.5  | 4  | 6       | 29.8  | 68      | 80   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 11               | 13 | 8  | 8  | 4             | 6    | 5       | 8    | 29.5 | 27.0  | 27.0    | 5    | 15      | 27.5 | 5       | 15   | 19.0             | 4    | 6.5  | 4  | 6       | 29.9  | 69      | 81   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 12               | 13 | 8  | 8  | 4             | 6    | 5       | 8.5  | 29.5 | 28.0  | 32.0    | 5    | 16      | 27.5 | 5       | 16   | 19.0             | 4    | 6    | 5  | 8.5     | 30.0  | 69      | 81   | 5       | 7    | 29.0 | 5    | 12        | 5                          | 11.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 12               | 14 | 8  | 8  | 5             | 9    | 5       | 7.5  | 29.6 | 28.0  | 32.0    | 5    | 15      | 27.0 | 5       | 15   | 19.0             | 4    | 6.5  | 5  | 9       | 30.1  | 70      | 82   | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 10.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 12               | 14 | 8  | 8  | 5             | 8.5  | 5       | 7.5  | 29.6 | 28.0  | 32.0    | 5    | 15      | 27.0 | 5       | 15   | 19.0             | 4    | 6    | 5  | 8.5     | 30.1  | 70      | 82   | 5       | 7    | 29.0 | 5    | 12        | 5                          | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 13               | 14 | 8  | 8  | 5             | 8.5  | 5       | 7.5  | 29.6 | 29.0  | 33.0    | 5    | 16      | 27.0 | 5       | 16   | 19.0             | 5    | 8.5  | 5  | 8       | 30.3  | 70      | 82   | 5       | 7    | 29.0 | 5    | 12        | 5                          | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 13               | 15 | 8  | 8  | 5             | 8.5  | 5       | 7    | 29.8 | 29.0  | 33.0    | 5    | 15      | 26.5 | 5       | 15   | 19.0             | 4    | 6    | 5  | 8       | 30.4  | 71      | 83   | 5       | 7    | 28.5 | 5    | 12        | 5                          | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 13               | 15 | 8  | 8  | 5             | 8    | 5       | 6.5  | 29.8 | 29.0  | 33.0    | 5    | 14      | 26.5 | 5       | 14   | 19.0             | 5    | 9    | 5  | 8       | 30.4  | 71      | 83   | 5       | 7    | 28.5 | 5    | 12        | 5                          | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 14               | 16 | 9  | 8  | 5             | 8    | 5       | 8    | 30.5 | 30.0  | 34.0    | 5    | 16      | 26.0 | 5       | 16   | 19.0             | 5    | 9    | 5  | 9       | 31.0  | 72      | 84   | 5       | 7    | 29.0 | 5    | 12        | 5                          | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 14               | 16 | 9  | 8  | 5             | 8    | 5       | 8    | 30.4 | 30.0  | 34.0    | 5    | 15      | 26.0 | 5       | 15   | 19.0             | 5    | 8.5  | 5  | 8.5     | 31.0  | 72      | 84   | 5       | 6.5  | 29.0 | 5    | 12        | 5                          | 9    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 14               | 16 | 10 | 8  | 5             | 7.5  | 5       | 7.5  | 31.0 | 30.0  | 30.0    | 5    | 15      | 26.0 | 5       | 15   | 19.0             | 5    | 8    | 4  | 6       | 31.1  | 72      | 84   | 5       | 6.5  | 29.0 | 5    | 12        | 5                          | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 5 FT |                     |      |      |      |               |      |         |      |      |       |         |      |         |      |         |      |                  |      |      |    |         |       |         |      |         |      |      |      |           | HEIGHT (HT) = 7 FT OR 8 FT |     |    |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|------|------|------|---------------|------|---------|------|------|-------|---------|------|---------|------|---------|------|------------------|------|------|----|---------|-------|---------|------|---------|------|------|------|-----------|----------------------------|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |      |      |      | TOP SLAB BARS |      |         |      |      |       |         |      |         |      |         |      | BOTTOM SLAB BARS |      |      |    |         |       |         |      |         |      |      |      | WALL BARS |                            |     |    |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |      |      |      | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |       | B1 BARS |      | B2 BARS |      |      |      |           |                            |     |    |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | SIZE                | SPA. | SIZE | SPA. | C1            | K2   |         | SIZE | SPA. | C5    |         |      |         |      | SIZE    | SPA. | C6               | SIZE | SPA. | C4 |         |       |         |      |         |      | K3   |      |           |                            |     |    |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS   | TX   | TI   | SIZE          | SPA. | SIZE    | SPA. | C1   | HT=7' | HT=8'   | SIZE | SPA.    | C5   | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | HT=7'   | HT=8' | SIZE    | SPA. | C7      | SIZE | SPA. | SIZE | SPA.      | G1                         |     |    |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 11                  | 8    | 8    | 8    | 4             | 6    | 4       | 9.5  | 30.9 | 27.0  | 27.0    | 4    | 20      | 56.0 | 4       | 20   | 22.0             | 4    | 10.5 | 4  | 7       | 52.1  | 88      | 100  | 4       | 7    | 31.0 | 5    | 12        | 5                          | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 11                  | 8    | 8    | 8    | 4             | 6    | 4       | 9    | 30.9 | 27.0  | 27.0    | 4    | 20      | 56.0 | 4       | 20   | 22.0             | 4    | 10   | 4  | 6.5     | 50.0  | 88      | 100  | 4       | 6.5  | 31.0 | 5    | 12        | 5                          | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 8    | 8    | 8    | 4             | 10   | 4       | 7    | 30.9 | 24.0  | 24.0    | 4    | 18      | 56.0 | 4       | 18   | 20.5             | 4    | 10.5 | 4  | 6       | 47.4  | 88      | 100  | 4       | 6.5  | 30.0 | 5    | 12        | 5                          | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 9    | 8    | 8    | 4             | 12   | 4       | 7    | 51.6 | 24.0  | 24.0    | 4    | 19      | 32.5 | 4       | 19   | 20.0             | 4    | 12   | 4  | 6.5     | 46.3  | 89      | 101  | 4       | 7.5  | 29.5 | 5    | 12        | 5                          | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 9    | 8    | 8    | 4             | 12   | 4       | 6.5  | 44.5 | 24.0  | 24.0    | 4    | 18      | 30.5 | 4       | 18   | 19.5             | 4    | 11   | 4  | 6       | 44.0  | 89      | 101  | 4       | 7    | 29.5 | 5    | 12        | 5                          | 12  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                   | 9    | 9    | 8    | 4             | 11.5 | 4       | 7    | 40.8 | 24.0  | 24.0    | 4    | 16      | 29.5 | 4       | 16   | 19.5             | 4    | 10   | 4  | 6.5     | 41.4  | 89      | 101  | 4       | 6.5  | 29.0 | 5    | 12        | 5                          | 12  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                   | 9    | 9    | 8    | 4             | 12   | 4       | 7    | 36.9 | 24.0  | 24.0    | 4    | 17      | 28.0 | 4       | 17   | 19.0             | 4    | 10.5 | 4  | 7       | 38.3  | 89      | 101  | 4       | 6.5  | 29.0 | 5    | 12        | 5                          | 12  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                   | 9    | 9    | 8    | 4             | 10.5 | 4       | 6.5  | 36.4 | 24.0  | 24.0    | 4    | 15      | 28.0 | 4       | 15   | 19.0             | 4    | 9    | 4  | 6.5     | 37.9  | 89      | 101  | 4       | 6    | 29.0 | 5    | 12        | 5                          | 12  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                   | 9    | 9    | 8    | 4             | 9    | 5       | 7    | 36.0 | 24.0  | 28.0    | 4    | 13      | 28.0 | 4       | 13   | 19.0             | 4    | 8    | 5  | 7       | 37.5  | 89      | 101  | 5       | 7.5  | 28.5 | 5    | 12        | 5                          | 12  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 8                   | 9    | 9    | 8    | 4             | 8    | 5       | 6    | 35.8 | 24.0  | 28.0    | 5    | 18      | 28.0 | 5       | 18   | 19.0             | 4    | 7.5  | 5  | 6       | 37.3  | 89      | 101  | 5       | 7    | 28.5 | 5    | 12        | 5                          | 12  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 8                   | 10   | 9    | 8    | 4             | 7.5  | 6       | 7    | 38.4 | 24.0  | 28.0    | 5    | 17      | 28.0 | 5       | 17   | 19.5             | 4    | 7.5  | 5  | 6.5     | 38.1  | 90      | 102  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 11  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 9                   | 10   | 9    | 8    | 4             | 7.5  | 5       | 6    | 36.4 | 25.0  | 29.0    | 5    | 17      | 27.5 | 5       | 17   | 19.0             | 4    | 7    | 5  | 6       | 37.8  | 90      | 102  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 10  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 9                   | 11   | 9    | 8    | 4             | 7    | 5       | 6    | 36.1 | 25.0  | 29.0    | 5    | 16      | 27.5 | 5       | 16   | 19.0             | 4    | 7    | 5  | 6       | 38.5  | 91      | 103  | 5       | 8    | 29.0 | 5    | 12        | 5                          | 9.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 10                  | 11   | 9    | 8    | 4             | 7    | 5       | 6    | 36.9 | 26.0  | 30.0    | 5    | 17      | 27.5 | 5       | 17   | 19.0             | 4    | 6.5  | 5  | 6       | 38.3  | 91      | 103  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 9   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 10                  | 12   | 9    | 8    | 4             | 6.5  | 5       | 6    | 36.8 | 30.0  | 30.0    | 5    | 16      | 27.5 | 5       | 16   | 19.0             | 4    | 7    | 5  | 6       | 38.9  | 92      | 104  | 5       | 8    | 29.0 | 5    | 12        | 5                          | 8.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 11                  | 12   | 9    | 8    | 4             | 6.5  | 5       | 6    | 37.4 | 31.0  | 31.0    | 5    | 17      | 27.0 | 5       | 17   | 19.0             | 4    | 6.5  | 6  | 7.5     | 41.6  | 92      | 104  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 8.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 11                  | 13   | 9    | 8    | 4             | 6.5  | 6       | 7    | 40.3 | 31.0  | 31.0    | 5    | 16      | 27.0 | 5       | 16   | 19.0             | 4    | 6.5  | 5  | 6       | 39.1  | 93      | 105  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 8.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 11                  | 13   | 9    | 8    | 4             | 6    | 6       | 7    | 40.1 | 31.0  | 35.0    | 5    | 15      | 27.0 | 5       | 15   | 19.0             | 4    | 6.5  | 6  | 7       | 42.1  | 93      | 105  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 8.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 12                  | 14   | 10   | 8    | 4             | 6    | 5       | 6.5  | 37.8 | 32.0  | 32.0    | 5    | 17      | 26.0 | 5       | 17   | 19.0             | 4    | 6.5  | 5  | 7       | 39.5  | 94      | 106  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 12                  | 14   | 10   | 8    | 5             | 9    | 5       | 6    | 37.6 | 32.0  | 32.0    | 5    | 16      | 26.0 | 5       | 16   | 19.0             | 4    | 6    | 5  | 6.5     | 39.5  | 94      | 106  | 5       | 7    | 29.0 | 5    | 12        | 5                          | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 12                  | 15   | 11   | 8    | 5             | 8.5  | 5       | 7    | 37.8 | 28.0  | 32.0    | 5    | 15      | 26.0 | 5       | 15   | 19.0             | 4    | 6    | 5  | 7       | 40.0  | 95      | 107  | 5       | 7.5  | 29.0 | 5    | 12        | 5                          | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 13                  | 15   | 11   | 8    | 5             | 8.5  | 5       | 7    | 38.3 | 33.0  | 33.0    | 5    | 17      | 25.5 | 5       | 17   | 18.5             | 4    | 6    | 5  | 7       | 39.9  | 95      | 107  | 5       | 7    | 29.0 | 5    | 12        | 5                          | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 13                  | 15   | 11   | 8    | 5             | 8.5  | 5       | 6.5  | 38.1 | 33.0  | 33.0    | 5    | 16      | 25.5 | 5       | 16   | 18.5             | 5    | 9    | 5  | 7       | 39.9  | 95      | 107  | 5       | 6.5  | 29.0 | 5    | 12        | 5                          | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 13                  | 16   | 12   | 8    | 5             | 8    | 5       | 6.5  | 38.3 | 29.0  | 33.0    | 5    | 16      | 25.5 | 5       | 16   | 18.5             | 4    | 6    | 5  | 7       | 40.4  | 96      | 108  | 5       | 7    | 29.0 | 5    | 12        | 5                          | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 14                  | 16   | 12   | 8    | 5             | 8    | 5       | 6.5  | 38.8 | 34.0  | 34.0    | 5    | 17      | 25.0 | 5       | 17   | 18.5             | 5    | 9    | 5  | 6.5     | 40.4  | 96      | 108  | 5       | 6.5  | 29.0 | 5    | 12        | 5                          | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 14                  | 16   | 12   | 8    | 5             | 7.5  | 5       | 6.5  | 38.8 | 34.0  | 34.0    | 5    | 17      | 25.0 | 5       | 17   | 18.5             | 5    | 8.5  | 5  | 6.5     | 40.3  | 96      | 108  | 5       | 6.5  | 29.0 | 5    | 12        | 5                          | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |



**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**CONCRETE DOUBLE BOX CULVERT**  
MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS  
SPAN (S): 5 FEET  
HEIGHT (HT): 7 THRU 8 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

703.47

SHEET NO.  
5 OF 27

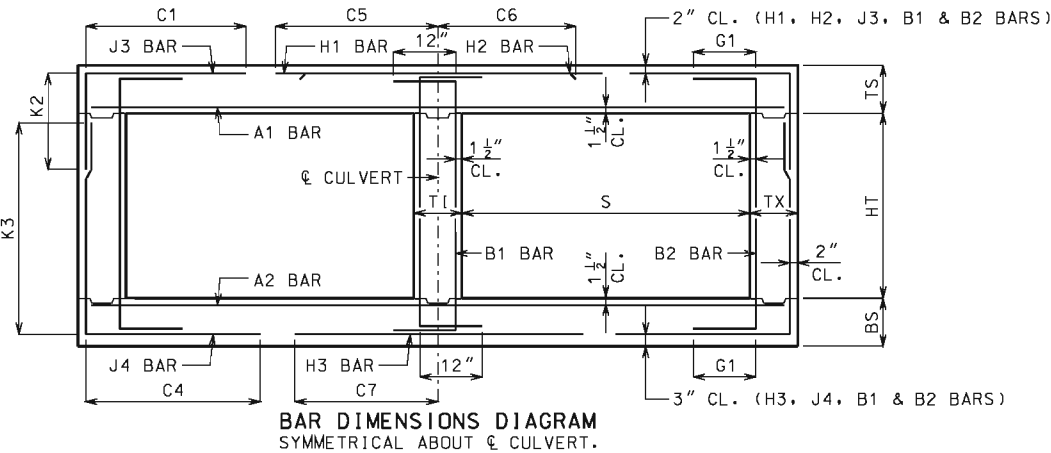
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 6 FT |                  |    |    |    |               |      |         |      |      |       |       |         |      |      |         |      |                  |         |      |         |      |      |      |       |         |       | HEIGHT (HT) = 3 FT OR 4 FT OR 5 FT |         |           |         |      |      |      |    |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|-------|-------|---------|------|------|---------|------|------------------|---------|------|---------|------|------|------|-------|---------|-------|------------------------------------|---------|-----------|---------|------|------|------|----|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |         |      |      |         |      | BOTTOM SLAB BARS |         |      |         |      |      |      |       |         |       |                                    |         | WALL BARS |         |      |      |      |    |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       | H1 BARS |      |      | H2 BARS |      |                  | A2 BARS |      | J4 BARS |      |      |      |       | H3 BARS |       |                                    | B1 BARS |           | B2 BARS |      |      |      |    |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |         | SIZE | SPA. | C5      | SIZE | SPA.             | C6      | SIZE | SPA.    | SIZE | SPA. | C4   | K3    |         |       | SIZE                               | SPA.    | C7        | SIZE    | SPA. | SIZE | SPA. | G1 |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=3' | HT=4' | HT=5'   |      |      |         |      |                  |         |      |         |      |      |      | HT=3' | HT=4'   | HT=5' |                                    |         |           |         |      |      |      |    |  |  |  |  |  |  |  |
| 1 FT            | 11               | 8  | 8  | 8  | 5             | 8.5  | 4       | 9.5  | 34.5 | 27.0  | 27.0  | 27.0    | 4    | 16   | 64.5    | 4    | 16               | 23.0    | 4    | 9.5     | 4    | 9.5  | 37.6 | 40    | 52      | 64    | 4                                  | 6       | 34.5      | 5       | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 2 FT            | 11               | 8  | 8  | 8  | 5             | 8.5  | 4       | 9.5  | 34.5 | 27.0  | 27.0  | 27.0    | 4    | 15   | 64.5    | 4    | 15               | 22.5    | 4    | 9       | 4    | 9    | 35.0 | 40    | 52      | 64    | 5                                  | 7.5     | 34.0      | 5       | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 4 FT            | 8                | 8  | 8  | 8  | 4             | 8    | 4       | 9    | 34.0 | 24.0  | 24.0  | 24.0    | 4    | 13   | 43.5    | 4    | 13               | 21.0    | 4    | 9       | 4    | 9.5  | 32.0 | 40    | 52      | 64    | 5                                  | 7.5     | 33.5      | 5       | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 6 FT            | 8                | 8  | 8  | 8  | 4             | 9.5  | 4       | 9.5  | 30.4 | 24.0  | 24.0  | 24.0    | 4    | 13   | 35.5    | 4    | 13               | 20.5    | 4    | 8.5     | 4    | 9    | 29.9 | 40    | 52      | 64    | 5                                  | 7       | 32.5      | 5       | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 8 FT            | 8                | 8  | 8  | 8  | 4             | 9    | 4       | 9    | 29.3 | 24.0  | 24.0  | 24.0    | 4    | 12   | 34.0    | 4    | 12               | 20.5    | 4    | 7.5     | 4    | 8    | 28.9 | 40    | 52      | 64    | 5                                  | 6.5     | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 10 FT           | 8                | 9  | 8  | 8  | 4             | 8    | 4       | 8    | 28.8 | 24.0  | 24.0  | 24.0    | 5    | 17   | 33.0    | 5    | 17               | 20.5    | 4    | 7.5     | 4    | 10   | 27.8 | 41    | 53      | 65    | 5                                  | 7       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 12 FT           | 8                | 9  | 8  | 8  | 4             | 7    | 4       | 7    | 28.4 | 24.0  | 24.0  | 24.0    | 5    | 16   | 32.5    | 5    | 16               | 21.5    | 4    | 6.5     | 4    | 9    | 27.3 | 41    | 53      | 65    | 5                                  | 6.5     | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 14 FT           | 8                | 9  | 8  | 8  | 4             | 7.5  | 4       | 7    | 27.0 | 24.0  | 24.0  | 24.0    | 5    | 16   | 31.5    | 5    | 16               | 21.5    | 4    | 6.6     | 4    | 9.5  | 25.9 | 41    | 53      | 65    | 5                                  | 6       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 16 FT           | 8                | 10 | 8  | 8  | 4             | 6.5  | 4       | 6    | 27.1 | 24.0  | 24.0  | 24.0    | 5    | 15   | 31.5    | 5    | 15               | 22.5    | 4    | 6.5     | 4    | 11.5 | 25.3 | 42    | 54      | 66    | 5                                  | 6.5     | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 18 FT           | 9                | 11 | 8  | 8  | 4             | 6.5  | 4       | 7.5  | 26.6 | 25.0  | 25.0  | 25.0    | 5    | 16   | 31.5    | 5    | 16               | 21.5    | 4    | 6.5     | 4    | 10.5 | 25.0 | 43    | 55      | 67    | 5                                  | 7       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 20 FT           | 10               | 11 | 8  | 8  | 4             | 6    | 4       | 7.5  | 26.1 | 26.0  | 26.0  | 26.0    | 5    | 15   | 31.5    | 5    | 15               | 21.0    | 4    | 6       | 4    | 10   | 25.3 | 43    | 55      | 67    | 5                                  | 6.5     | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 22 FT           | 10               | 12 | 8  | 8  | 5             | 9    | 4       | 6.5  | 26.3 | 26.0  | 26.0  | 26.0    | 5    | 15   | 31.5    | 5    | 15               | 21.5    | 4    | 6       | 4    | 9.5  | 24.9 | 44    | 56      | 68    | 5                                  | 6.5     | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 24 FT           | 11               | 12 | 8  | 8  | 5             | 9    | 4       | 7    | 25.9 | 27.0  | 27.0  | 27.0    | 5    | 14   | 31.5    | 5    | 14               | 21.0    | 5    | 8.5     | 4    | 9    | 25.1 | 44    | 56      | 68    | 5                                  | 6       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 26 FT           | 11               | 13 | 8  | 8  | 5             | 8.5  | 4       | 6    | 26.0 | 27.0  | 27.0  | 27.0    | 5    | 14   | 31.5    | 5    | 14               | 21.5    | 5    | 8.5     | 4    | 8.5  | 24.9 | 45    | 57      | 69    | 5                                  | 6       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 28 FT           | 12               | 14 | 8  | 8  | 5             | 8.5  | 4       | 6.5  | 25.9 | 28.0  | 28.0  | 28.0    | 5    | 13   | 31.5    | 5    | 13               | 20.5    | 5    | 9       | 4    | 7.5  | 25.0 | 46    | 58      | 70    | 5                                  | 6.5     | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 30 FT           | 13               | 14 | 8  | 8  | 5             | 8.5  | 4       | 6.5  | 25.6 | 29.0  | 29.0  | 29.0    | 5    | 12   | 31.0    | 5    | 12               | 20.0    | 5    | 8.5     | 4    | 7.5  | 25.1 | 46    | 58      | 70    | 5                                  | 6       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 32 FT           | 13               | 15 | 8  | 8  | 5             | 8    | 4       | 6    | 25.8 | 29.0  | 29.0  | 29.0    | 5    | 12   | 31.0    | 5    | 12               | 20.5    | 5    | 8.5     | 4    | 7    | 25.1 | 47    | 59      | 71    | 5                                  | 6       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 34 FT           | 14               | 15 | 8  | 8  | 5             | 8    | 4       | 6    | 25.5 | 30.0  | 30.0  | 30.0    | 5    | 12   | 31.0    | 5    | 12               | 20.0    | 5    | 8       | 4    | 7    | 25.3 | 47    | 59      | 71    | 6                                  | 8.5     | 35.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 36 FT           | 14               | 16 | 8  | 8  | 5             | 7.5  | 5       | 8.5  | 25.8 | 30.0  | 30.0  | 30.0    | 5    | 12   | 31.0    | 5    | 12               | 20.0    | 5    | 8       | 4    | 6.5  | 25.3 | 48    | 60      | 72    | 5                                  | 6       | 32.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 38 FT           | 15               | 16 | 8  | 8  | 5             | 7.5  | 4       | 6    | 27.5 | 31.0  | 31.0  | 31.0    | 5    | 12   | 35.5    | 5    | 12               | 25.0    | 5    | 7.5     | 4    | 6.5  | 25.4 | 48    | 60      | 72    | 6                                  | 8       | 35.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 40 FT           | 15               | 17 | 8  | 8  | 5             | 7    | 5       | 8    | 30.8 | 31.0  | 31.0  | 31.0    | 6    | 17   | 39.5    | 6    | 17               | 29.0    | 5    | 7.5     | 4    | 6    | 25.4 | 49    | 61      | 73    | 6                                  | 8.5     | 35.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 42 FT           | 16               | 17 | 8  | 8  | 5             | 7    | 5       | 7    | 30.6 | 32.0  | 32.0  | 32.0    | 5    | 12   | 35.0    | 5    | 12               | 25.0    | 5    | 7.5     | 4    | 6    | 25.6 | 49    | 61      | 73    | 6                                  | 8       | 35.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 44 FT           | 16               | 18 | 8  | 8  | 5             | 6.5  | 5       | 7    | 30.8 | 32.0  | 32.0  | 36.0    | 6    | 17   | 39.0    | 6    | 17               | 29.0    | 5    | 7.5     | 5    | 6.5  | 25.6 | 50    | 62      | 74    | 6                                  | 8       | 35.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 46 FT           | 16               | 18 | 8  | 8  | 5             | 6    | 5       | 7    | 30.8 | 32.0  | 32.0  | 36.0    | 6    | 16   | 39.0    | 6    | 16               | 29.0    | 5    | 7       | 5    | 6.5  | 25.6 | 50    | 62      | 74    | 6                                  | 8       | 35.0      | 5       | 12   | 5    | 11.5 | 0  |  |  |  |  |  |  |  |
| 48 FT           | 17               | 19 | 8  | 8  | 5             | 6.5  | 5       | 6.5  | 30.8 | 37.0  | 37.0  | 37.0    | 5    | 12   | 34.5    | 5    | 12               | 24.5    | 5    | 7.5     | 5    | 6.5  | 25.9 | 51    | 63      | 75    | 6                                  | 8       | 35.0      | 5       | 12   | 5    | 10.5 | 0  |  |  |  |  |  |  |  |
| 50 FT           | 17               | 19 | 8  | 8  | 5             | 6    | 5       | 6.5  | 30.8 | 37.0  | 37.0  | 37.0    | 6    | 16   | 38.5    | 6    | 16               | 28.5    | 5    | 7       | 5    | 6.5  | 25.9 | 51    | 63      | 75    | 6                                  | 7.5     | 35.0      | 5       | 12   | 5    | 10   | 0  |  |  |  |  |  |  |  |

| SPAN (S) = 6 FT |                     |    |    |    |               |      |         |      |      |       |         |      |         |      |         |      |                  |      |      |      |         |      |         |       |         |      | HEIGHT (HT) = 6 FT OR 7 FT |      |           |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|------|---------|------|---------|------|------------------|------|------|------|---------|------|---------|-------|---------|------|----------------------------|------|-----------|------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |      |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |      |         |       |         |      |                            |      | WALL BARS |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      | B1 BARS |       | B2 BARS |      |                            |      |           |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         | SIZE | SPA.    | C5   | SIZE    | SPA. | C6               | SIZE | SPA. | SIZE | SPA.    | C4   | K3      |       | SIZE    | SPA. | C7                         | SIZE | SPA.      | SIZE | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    |               |      |         |      |      | HT=6' | HT=7'   |      |         |      |         |      |                  |      |      |      |         |      | HT=6'   | HT=7' |         |      |                            |      |           |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 11                  | 8  | 8  | 8  | 5             | 8    | 4       | 9.5  | 34.5 | 27.0  | 27.0    | 4    | 16      | 64.5 | 4       | 16   | 23.5             | 4    | 9    | 4    | 7.5     | 48.9 | 76      | 88    | 5       | 7.5  | 34.5                       | 5    | 12        | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 11                  | 8  | 8  | 8  | 5             | 8    | 4       | 9.5  | 34.5 | 27.0  | 27.0    | 4    | 15      | 64.5 | 4       | 15   | 23.0             | 4    | 8.5  | 4    | 7       | 45.0 | 76      | 88    | 5       | 7.5  | 34.0                       | 5    | 12        | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 8  | 8  | 8  | 4             | 7.5  | 4       | 7.5  | 34.5 | 24.0  | 24.0    | 4    | 13      | 64.5 | 4       | 13   | 21.0             | 4    | 8.5  | 4    | 7       | 41.6 | 76      | 88    | 5       | 7    | 33.5                       | 5    | 12        | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 8  | 8  | 8  | 4             | 9    | 4       | 7.5  | 40.9 | 24.0  | 24.0    | 4    | 13      | 36.0 | 4       | 13   | 20.5             | 4    | 8    | 4    | 6.5     | 38.1 | 76      | 88    | 5       | 7    | 32.5                       | 5    | 12        | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 8  | 8  | 8  | 4             | 9    | 4       | 7    | 37.0 | 24.0  | 24.0    | 4    | 12      | 34.0 | 4       | 12   | 20.5             | 4    | 7.5  | 4    | 6       | 36.3 | 76      | 88    | 5       | 6.5  | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                   | 9  | 8  | 8  | 4             | 8    | 4       | 6    | 35.1 | 24.0  | 24.0    | 5    | 17      | 33.0 | 5       | 17   | 21.0             | 4    | 7.5  | 4    | 6.5     | 35.5 | 77      | 89    | 5       | 7    | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                   | 9  | 8  | 8  | 4             | 7    | 5       | 6.5  | 34.1 | 24.0  | 24.0    | 5    | 16      | 32.5 | 5       | 16   | 21.5             | 4    | 6.5  | 4    | 6       | 34.5 | 77      | 89    | 5       | 6.5  | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                   | 9  | 8  | 8  | 4             | 7    | 5       | 6.5  | 31.8 | 24.0  | 24.0    | 5    | 16      | 31.5 | 5       | 16   | 21.5             | 4    | 6.5  | 4    | 6       | 32.0 | 77      | 89    | 5       | 6    | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                   | 10 | 8  | 8  | 4             | 6.5  | 5       | 6    | 31.6 | 24.0  | 24.0    | 5    | 15      | 31.0 | 5       | 15   | 22.5             | 4    | 6.5  | 4    | 7       | 32.0 | 78      | 90    | 5       | 6.5  | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 9                   | 11 | 8  | 8  | 4             | 6.5  | 5       | 6.5  | 31.8 | 25.0  | 25.0    | 5    | 16      | 31.0 | 5       | 16   | 21.5             | 4    | 6.5  | 4    | 6.5     | 32.3 | 79      | 91    | 5       | 7    | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 10                  | 11 | 8  | 8  | 4             | 6    | 5       | 7.5  | 31.8 | 26.0  | 30.0    | 5    | 15      | 31.0 | 5       | 15   | 21.0             | 4    | 6    | 5    | 7.5     | 32.1 | 79      | 91    | 5       | 6.5  | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 10                  | 12 | 8  | 8  | 5             | 9    | 5       | 7    | 31.6 | 26.0  | 30.0    | 5    | 15      | 31.0 | 5       | 15   | 21.5             | 4    | 6    | 5    | 8       | 32.3 | 80      | 92    | 5       | 6.5  | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 11                  | 12 | 8  | 8  | 5             | 9    | 5       | 7.5  | 31.8 | 27.0  | 31.0    | 5    | 14      | 31.0 | 5       | 14   | 20.5             | 5    | 8.5  | 5    | 7.5     | 32.1 | 80      | 92    | 5       | 6    | 32.0                       | 5    | 12        | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 11                  | 13 | 8  | 8  | 5             | 8.5  | 5       | 6.5  | 31.8 | 27.0  | 31.0    | 5    | 14      | 31.0 | 5       | 14   | 21.0             | 5    | 9    | 5    | 7.5     | 32.3 | 81      | 93    | 5       | 6    | 32.0                       | 5    | 12        | 5    | 11   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 12                  | 14 | 8  | 8  | 5             | 8.5  | 5       | 7    | 31.9 | 28.0  | 32.0    | 5    | 13      | 30.5 | 5       | 13   | 20.0             | 5    | 9    | 5    | 8       | 32.6 | 82      | 94    | 5       | 6.5  | 32.0                       | 5    | 12        | 5    | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 12                  | 14 | 8  | 8  | 5             | 7.5  | 5       | 6.5  | 31.8 | 28.0  | 32.0    | 5    | 13      | 30.5 | 5       | 13   | 20.5             | 5    | 8.5  | 5    | 7.5     | 32.5 | 82      | 94    | 5       | 6    | 32.0                       | 5    | 12        | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 13                  | 15 | 8  | 8  | 5             | 8    | 5       | 6.5  | 32.0 | 29.0  | 33.0    | 5    | 12      | 30.0 | 5       | 12   | 20.0             | 5    | 8.5  | 5    | 7.5     | 32.8 | 83      | 95    | 5       | 6    | 32.0                       | 5    | 12        | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 13                  | 15 | 8  | 8  | 5             | 7    | 5       | 6    | 31.9 | 29.0  | 33.0    | 5    | 12      | 30.0 | 5       | 12   | 20.0             | 5    | 8    | 5    | 7       | 32.8 | 83      | 95    | 5       | 6    | 32.0                       | 5    | 12        | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 14                  | 16 | 9  | 8  | 5             | 7.5  | 5       | 7.5  | 32.6 | 30.0  | 34.0    | 5    | 12      | 29.5 | 5       | 12   | 19.5             | 5    | 8    | 5    | 8       | 33.3 | 84      | 96    | 5       | 6    | 32.0                       | 5    | 12        | 5    | 9    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 14                  | 16 | 9  | 8  | 5             | 7    | 5       | 7    | 32.5 | 30.0  | 34.0    | 5    | 12      | 29.5 | 5       | 12   | 19.5             | 5    | 8    | 5    | 8       | 33.1 | 84      | 96    | 6       | 8    | 35.0                       | 5    | 12        | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 15                  | 17 | 9  | 8  | 5             | 7    | 5       | 6.5  | 37.8 | 31.0  | 35.0    | 5    | 13      | 34.0 | 5       | 13   | 24.5             | 5    | 8    | 5    | 8       | 33.5 | 85      | 97    | 6       | 8.5  | 35.0                       | 5    | 12        | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 15                  | 17 | 10 | 8  | 5             | 7    | 5       | 7.5  | 38.3 | 31.0  | 35.0    | 5    | 12      | 34.0 | 5       | 12   | 24.5             | 5    | 7.5  | 5    | 7.5     | 33.6 | 85      | 97    | 6       | 8    | 35.0                       | 5    | 12        | 5    | 9    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 15                  | 18 | 10 | 8  | 5             | 6    | 5       | 7    | 38.4 | 31.0  | 35.0    | 5    | 12      | 34.0 | 5       | 12   | 24.5             | 5    | 7.5  | 5    | 7.5     | 33.9 | 86      | 98    | 6       | 8    | 35.0                       | 5    | 12        | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 16                  | 18 | 10 | 8  | 5             | 6.5  | 5       | 6.5  | 38.4 | 32.0  | 36.0    | 5    | 12      | 33.0 | 5       | 12   | 24.5             | 5    | 7.5  | 5    | 7.5     | 34.0 | 86      | 98    | 6       | 7.5  | 35.0                       | 5    | 12        | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 16                  | 19 | 11 | 8  | 5             | 6.5  | 5       | 7    | 39.0 | 32.0  | 36.0    | 5    | 12      | 33.0 | 5       | 12   | 24.5             | 5    | 7.5  | 5    | 8.5     | 34.4 | 87      | 99    | 6       | 8    | 35.0                       | 5    | 12        | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 17                  | 19 | 11 | 8  | 5             | 6.5  | 5       | 7    | 39.1 | 33.0  | 37.0    | 5    | 13      | 32.5 | 5       | 13   | 24.5             | 5    | 7    | 5    | 8       | 34.5 | 87      | 99    | 6       | 7.5  | 35.0                       | 5    | 12        | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| SPAN (S) = 6 FT |                  |    |    |    |               |      |         |      |      |       |         |      |         |      |         |      |                  |      |      |    |         |       |         |      |         |      |      |      |           | HEIGHT (HT) = 8 FT OR 9 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|-------|---------|------|---------|------|---------|------|------------------|------|------|----|---------|-------|---------|------|---------|------|------|------|-----------|----------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |      |         |      |         |      | BOTTOM SLAB BARS |      |      |    |         |       |         |      |         |      |      |      | WALL BARS |                            |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |      | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |       | B1 BARS |      | B2 BARS |      |      |      |           |                            |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         | SIZE | SPA.    | C5   | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | K3      |       | SIZE    | SPA. | C7      | SIZE | SPA. | SIZE | SPA.      | G1                         |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=8' | HT=9'   |      |         |      |         |      |                  |      |      |    | HT=8'   | HT=9' |         |      |         |      |      |      |           |                            |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 11               | 9  | 8  | 8  | 5             | 8    | 4       | 7    | 34.5 | 27.0  | 27.0    | 4    | 16      | 64.5 | 4       | 16   | 23.5             | 4    | 9.5  | 4  | 6.5     | 59.4  | 101     | 113  | 4       | 6.5  | 34.5 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 11               | 9  | 8  | 8  | 5             | 8    | 4       | 6.5  | 34.5 | 27.0  | 27.0    | 4    | 16      | 64.5 | 4       | 16   | 23.0             | 4    | 9    | 4  | 6       | 57.0  | 101     | 113  | 4       | 6    | 34.0 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                | 9  | 9  | 8  | 4             | 7.5  | 4       | 6.5  | 35.1 | 24.0  | 24.0    | 4    | 13      | 65.0 | 4       | 13   | 21.0             | 4    | 9.5  | 4  | 6.5     | 53.0  | 101     | 113  | 4       | 6    | 33.5 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                | 9  | 9  | 8  | 4             | 9    | 4       | 6    | 53.1 | 24.0  | 24.0    | 4    | 13      | 36.0 | 4       | 13   | 20.5             | 4    | 9    | 4  | 6       | 49.5  | 101     | 113  | 4       | 6    | 33.0 | 5    | 12        | 5                          | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                | 9  | 9  | 8  | 4             | 9    | 5       | 7    | 46.5 | 24.0  | 28.0    | 4    | 12      | 33.5 | 4       | 12   | 20.5             | 4    | 8    | 5  | 6.5     | 46.5  | 101     | 113  | 5       | 7.5  | 32.5 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                | 9  | 9  | 8  | 4             | 8    | 5       | 6    | 43.8 | 24.0  | 28.0    | 5    | 17      | 32.5 | 5       | 17   | 20.5             | 4    | 7.5  | 5  | 6       | 44.6  | 101     | 113  | 5       | 6.5  | 32.0 | 5    | 12        | 5                          | 11.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 8                | 9  | 10 | 8  | 4             | 7.5  | 5       | 6.5  | 41.8 | 24.0  | 28.0    | 5    | 17      | 32.0 | 5       | 17   | 21.5             | 4    | 6.5  | 5  | 6.5     | 42.9  | 101     | 113  | 5       | 6.5  | 32.0 | 5    | 12        | 5                          | 11.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 8                | 9  | 10 | 8  | 4             | 7.5  | 5       | 6.5  | 38.5 | 24.0  | 28.0    | 5    | 17      | 31.0 | 5       | 17   | 21.0             | 4    | 6.5  | 5  | 6.5     | 39.6  | 101     | 113  | 5       | 6    | 31.5 | 5    | 12        | 5                          | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 8                | 10 | 10 | 8  | 4             | 6.5  | 5       | 6    | 38.1 | 24.0  | 28.0    | 5    | 16      | 31.0 | 5       | 16   | 22.0             | 4    | 6.5  | 5  | 7       | 40.6  | 102     | 114  | 5       | 6.5  | 32.0 | 5    | 12        | 5                          | 11.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 9                | 11 | 10 | 8  | 4             | 6.5  | 5       | 6    | 38.8 | 25.0  | 29.0    | 5    | 16      | 31.0 | 5       | 16   | 21.0             | 4    | 6.5  | 5  | 7       | 41.1  | 103     | 115  | 5       | 7    | 32.0 | 5    | 12        | 5                          | 10.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 9                | 11 | 10 | 8  | 4             | 6    | 5       | 6    | 38.5 | 25.0  | 29.0    | 5    | 16      | 31.0 | 5       | 16   | 22.0             | 4    | 6    | 5  | 6.5     | 40.9  | 103     | 115  | 5       | 6    | 32.0 | 5    | 12        | 5                          | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 10               | 12 | 10 | 8  | 4             | 6    | 5       | 6.5  | 39.1 | 30.0  | 30.0    | 5    | 15      | 30.5 | 5       | 15   | 21.0             | 4    | 6    | 5  | 6.5     | 41.4  | 104     | 116  | 5       | 6.5  | 32.0 | 5    | 12        | 5                          | 9    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 11               | 13 | 10 | 8  | 4             | 6    | 5       | 6.5  | 39.6 | 31.0  | 31.0    | 5    | 14      | 30.5 | 5       | 14   | 20.0             | 4    | 6    | 5  | 6.5     | 41.8  | 105     | 117  | 5       | 6.5  | 32.0 | 5    | 12        | 5                          | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 11               | 13 | 10 | 8  | 5             | 9    | 5       | 6    | 39.4 | 31.0  | 31.0    | 5    | 14      | 30.5 | 5       | 14   | 20.5             | 5    | 9    | 5  | 6.5     | 41.6  | 105     | 117  | 5       | 6    | 32.0 | 5    | 12        | 5                          | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 12               | 14 | 10 | 8  | 5             | 9    | 5       | 6    | 40.0 | 32.0  | 32.0    | 5    | 13      | 30.0 | 5       | 13   | 19.5             | 4    | 6    | 5  | 6.5     | 42.0  | 106     | 118  | 5       | 6.5  | 32.0 | 5    | 12        | 5                          | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 12               | 14 | 10 | 8  | 5             | 8    | 5       | 6    | 39.9 | 32.0  | 32.0    | 5    | 13      | 30.0 | 5       | 13   | 20.0             | 5    | 8.5  | 5  | 6       | 41.9  | 106     | 118  | 5       | 6    | 32.0 | 5    | 12        | 5                          | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 13               | 15 | 11 | 8  | 5             | 8.5  | 5       | 7    | 40.4 | 33.0  | 33.0    | 5    | 13      | 29.0 | 5       | 13   | 19.5             | 5    | 8.5  | 5  | 7       | 42.3  | 107     | 119  | 5       | 6    | 32.0 | 5    | 12        | 5                          | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 13               | 15 | 11 | 8  | 5             | 8    | 5       | 6.5  | 40.3 | 33.0  | 33.0    | 5    | 13      | 29.0 | 5       | 13   | 19.5             | 5    | 8    | 5  | 7       | 42.1  | 107     | 119  | 6       | 8    | 35.0 | 5    | 12        | 5                          | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 14               | 16 | 11 | 8  | 5             | 8    | 5       | 6    | 40.8 | 34.0  | 34.0    | 5    | 14      | 28.5 | 5       | 14   | 19.5             | 5    | 8.5  | 5  | 7       | 42.6  | 108     | 120  | 5       | 6    | 32.0 | 5    | 12        | 5                          | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 14               | 16 | 12 | 8  | 5             | 7.5  | 5       | 6.5  | 40.8 | 34.0  | 34.0    | 5    | 13      | 28.5 | 5       | 13   | 19.5             | 5    | 7.5  | 5  | 6.5     | 42.5  | 108     | 120  | 6       | 8    | 35.0 | 5    | 12        | 5                          | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 14               | 17 | 12 | 8  | 5             | 7    | 5       | 6    | 40.8 | 34.0  | 34.0    | 5    | 12      | 28.5 | 5       | 12   | 19.5             | 5    | 8    | 5  | 6.5     | 43.0  | 109     | 121  | 6       | 8    | 35.0 | 5    | 12        | 5                          | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 15               | 17 | 13 | 8  | 5             | 7    | 5       | 6    | 46.4 | 35.0  | 35.0    | 5    | 13      | 33.0 | 5       | 13   | 24.5             | 5    | 7    | 5  | 6       | 42.8  | 109     | 121  | 6       | 7.5  | 35.0 | 5    | 12        | 5                          | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 15               | 18 | 13 | 8  | 5             | 7    | 5       | 6    | 46.4 | 35.0  | 35.0    | 5    | 13      | 33.0 | 5       | 13   | 24.5             | 5    | 7.5  | 5  | 6       | 43.3  | 110     | 122  | 6       | 8    | 35.0 | 5    | 12        | 5                          | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 15               | 18 | 13 | 8  | 5             | 6    | 5       | 6    | 46.3 | 35.0  | 35.0    | 5    | 12      | 33.0 | 5       | 12   | 24.5             | 5    | 7.5  | 5  | 6       | 43.3  | 110     | 122  | 6       | 7.5  | 35.0 | 5    | 12        | 5                          | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 16               | 19 | 14 | 8  | 5             | 6.5  | 5       | 6    | 47.0 | 36.0  | 36.0    | 5    | 14      | 32.5 | 5       | 14   | 24.0             | 5    | 7.5  | 5  | 6       | 43.8  | 111     | 123  | 6       | 7.5  | 35.0 | 5    | 12        | 5                          | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 16               | 19 | 14 | 8  | 5             | 6    | 5       | 6    | 46.9 | 36.0  | 36.0    | 5    | 13      | 32.5 | 5       | 13   | 24.0             | 5    | 7    | 5  | 6       | 43.6  | 111     | 123  | 6       | 7.5  | 35.0 | 5    | 12        | 5                          | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**CONCRETE DOUBLE BOX CULVERT**  
MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS  
SPAN (S): 6 FEET  
HEIGHT (HT): 8 THRU 9 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

**703.47**

SHEET NO.  
7 OF 27

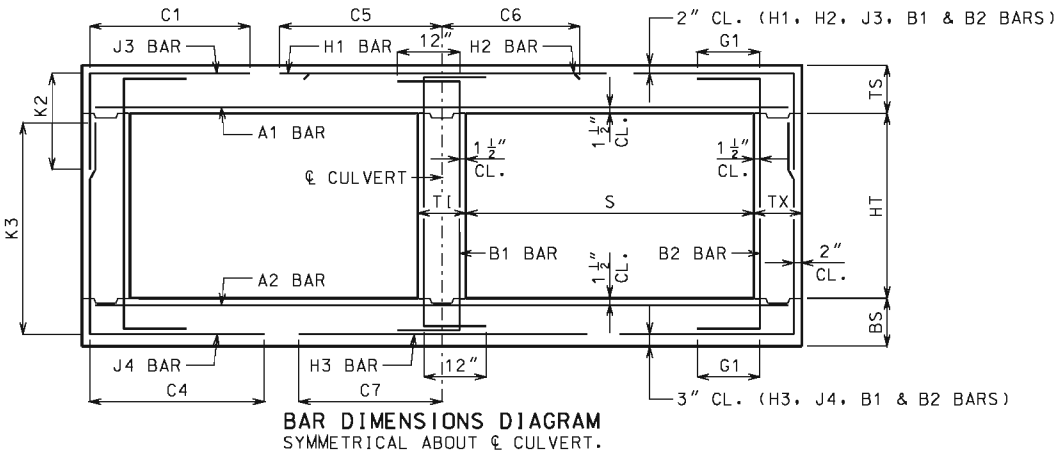
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 7 FT |                  |    |    |    |               |      |         |      |      |       |       |       |         |      |      |         |                  |      |         |      |         |      |      |       |       |       |         |      |           | HEIGHT (HT) = 4 FT OR 5 FT OR 6 FT |      |         |      |    |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|-------|-------|-------|---------|------|------|---------|------------------|------|---------|------|---------|------|------|-------|-------|-------|---------|------|-----------|------------------------------------|------|---------|------|----|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |       |         |      |      |         | BOTTOM SLAB BARS |      |         |      |         |      |      |       |       |       |         |      | WALL BARS |                                    |      |         |      |    |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |       | H1 BARS |      |      | H2 BARS |                  |      | A2 BARS |      | J4 BARS |      |      |       |       |       | H3 BARS |      |           | B1 BARS                            |      | B2 BARS |      |    |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |       | SIZE    | SPA. | C5   | SIZE    | SPA.             | C6   | SIZE    | SPA. | SIZE    | SPA. | C4   | K3    |       |       | SIZE    | SPA. | C7        | SIZE                               | SPA. | SIZE    | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=4' | HT=5' | HT=6' |         |      |      |         |                  |      |         |      |         |      |      | HT=4' | HT=5' | HT=6' |         |      |           |                                    |      |         |      |    |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 12               | 8  | 8  | 8  | 5             | 8    | 4       | 8.5  | 38.1 | 28.0  | 28.0  | 28.0  | 4       | 15   | 73.0 | 4       | 15               | 25.5 | 4       | 7    | 4       | 6.5  | 41.8 | 52    | 64    | 76    | 5       | 6.5  | 37.5      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 12               | 9  | 8  | 8  | 5             | 7.5  | 4       | 8.5  | 38.1 | 28.0  | 28.0  | 28.0  | 4       | 14   | 73.0 | 4       | 14               | 24.5 | 4       | 7.5  | 4       | 8.5  | 39.9 | 53    | 65    | 77    | 5       | 7    | 37.5      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                | 8  | 8  | 8  | 4             | 6    | 4       | 6.5  | 38.4 | 24.0  | 24.0  | 24.0  | 5       | 17   | 48.0 | 5       | 17               | 23.5 | 4       | 7    | 4       | 7    | 35.8 | 52    | 64    | 76    | 5       | 6    | 36.5      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                | 8  | 8  | 8  | 4             | 7    | 4       | 7    | 33.9 | 24.0  | 24.0  | 24.0  | 5       | 17   | 39.0 | 5       | 17               | 23.5 | 4       | 6.5  | 4       | 6.5  | 33.3 | 52    | 64    | 76    | 6       | 7    | 38.5      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                | 9  | 8  | 8  | 4             | 7    | 4       | 6.5  | 32.1 | 24.0  | 24.0  | 24.0  | 5       | 16   | 37.0 | 5       | 16               | 24.0 | 4       | 6.5  | 4       | 8    | 31.8 | 53    | 65    | 77    | 5       | 6    | 35.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                | 10 | 8  | 8  | 4             | 6    | 5       | 7    | 31.5 | 24.0  | 24.0  | 24.0  | 5       | 15   | 36.0 | 5       | 15               | 24.0 | 4       | 6.5  | 4       | 9.5  | 30.5 | 54    | 66    | 78    | 5       | 6.5  | 35.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 9                | 10 | 8  | 8  | 4             | 6    | 4       | 6.5  | 30.5 | 25.0  | 25.0  | 25.0  | 5       | 15   | 35.5 | 5       | 15               | 24.0 | 5       | 9    | 4       | 8.5  | 29.8 | 54    | 66    | 78    | 5       | 6    | 35.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 9                | 11 | 8  | 8  | 5             | 8.5  | 5       | 7    | 30.4 | 25.0  | 25.0  | 25.0  | 5       | 14   | 35.5 | 5       | 14               | 24.0 | 5       | 9    | 4       | 8.5  | 29.1 | 55    | 67    | 79    | 5       | 6    | 35.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 10               | 11 | 8  | 8  | 4             | 6    | 4       | 6.5  | 28.5 | 26.0  | 26.0  | 26.0  | 5       | 15   | 34.5 | 5       | 15               | 23.0 | 5       | 8.5  | 4       | 8    | 27.8 | 55    | 67    | 79    | 5       | 6    | 35.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 10               | 12 | 8  | 8  | 5             | 8    | 5       | 8    | 28.6 | 26.0  | 26.0  | 26.0  | 5       | 14   | 34.5 | 5       | 14               | 23.5 | 5       | 8.5  | 4       | 8.5  | 27.4 | 56    | 68    | 80    | 5       | 6    | 35.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 11               | 12 | 8  | 8  | 5             | 8    | 5       | 9    | 28.1 | 27.0  | 27.0  | 27.0  | 5       | 14   | 34.5 | 5       | 14               | 23.5 | 5       | 7    | 4       | 7    | 27.5 | 56    | 68    | 80    | 6       | 7    | 38.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 12               | 13 | 8  | 8  | 5             | 8    | 5       | 8.5  | 27.9 | 28.0  | 28.0  | 28.0  | 5       | 13   | 34.5 | 5       | 13               | 23.0 | 5       | 7.5  | 4       | 7    | 27.5 | 57    | 69    | 81    | 6       | 7.5  | 38.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 12               | 14 | 8  | 8  | 5             | 7.5  | 5       | 8.5  | 28.0 | 28.0  | 28.0  | 28.0  | 5       | 13   | 34.5 | 5       | 13               | 23.5 | 5       | 7.5  | 4       | 7    | 27.3 | 58    | 70    | 82    | 6       | 7.5  | 38.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 13               | 15 | 8  | 8  | 5             | 7    | 5       | 8.5  | 27.9 | 29.0  | 29.0  | 29.0  | 5       | 12   | 34.5 | 5       | 12               | 22.5 | 5       | 7.5  | 4       | 7    | 27.4 | 59    | 71    | 83    | 6       | 7.5  | 38.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 14               | 15 | 8  | 8  | 5             | 7    | 5       | 8.5  | 27.6 | 30.0  | 30.0  | 30.0  | 5       | 12   | 34.0 | 5       | 12               | 22.0 | 5       | 7    | 4       | 6.5  | 27.6 | 59    | 71    | 83    | 6       | 7    | 38.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 14               | 16 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 27.8 | 30.0  | 30.0  | 30.0  | 5       | 12   | 34.0 | 5       | 12               | 22.5 | 5       | 7    | 4       | 6.5  | 27.5 | 60    | 72    | 84    | 6       | 7    | 38.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 15               | 17 | 8  | 8  | 5             | 6.5  | 5       | 8    | 32.8 | 31.0  | 31.0  | 31.0  | 6       | 16   | 43.0 | 6       | 16               | 30.5 | 5       | 7.5  | 4       | 6    | 27.8 | 61    | 73    | 85    | 6       | 7.5  | 38.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 16               | 17 | 8  | 8  | 5             | 6.5  | 5       | 7    | 32.6 | 32.0  | 32.0  | 32.0  | 6       | 15   | 42.5 | 6       | 15               | 29.5 | 5       | 7    | 4       | 6    | 27.9 | 61    | 73    | 85    | 6       | 7    | 38.0      | 5                                  | 12   | 5       | 11.5 | 0  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 16               | 18 | 8  | 8  | 5             | 6    | 5       | 7    | 32.8 | 32.0  | 36.0  | 36.0  | 6       | 15   | 42.5 | 6       | 15               | 30.0 | 5       | 7    | 5       | 6.5  | 27.9 | 62    | 74    | 86    | 6       | 7    | 38.0      | 5                                  | 12   | 5       | 10.5 | 0  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 17               | 18 | 8  | 8  | 5             | 6    | 5       | 6.5  | 32.8 | 37.0  | 37.0  | 37.0  | 6       | 14   | 42.0 | 6       | 14               | 29.5 | 5       | 6    | 5       | 6.5  | 28.0 | 62    | 74    | 86    | 6       | 6.5  | 38.0      | 5                                  | 12   | 5       | 10   | 0  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 17               | 19 | 8  | 8  | 5             | 6    | 5       | 6.5  | 32.8 | 37.0  | 37.0  | 37.0  | 6       | 14   | 42.0 | 6       | 14               | 30.0 | 5       | 6.5  | 5       | 6.5  | 28.0 | 63    | 75    | 87    | 6       | 7    | 38.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 18               | 20 | 8  | 8  | 5             | 6    | 5       | 6.5  | 32.9 | 38.0  | 38.0  | 38.0  | 6       | 14   | 41.5 | 6       | 14               | 29.5 | 5       | 6.5  | 5       | 6    | 28.3 | 64    | 76    | 88    | 6       | 7    | 38.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 18               | 20 | 8  | 8  | 6             | 8    | 5       | 6.5  | 32.9 | 38.0  | 38.0  | 38.0  | 6       | 14   | 41.5 | 6       | 14               | 29.5 | 5       | 6.5  | 5       | 6    | 28.3 | 64    | 76    | 88    | 6       | 6.5  | 38.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 19               | 21 | 8  | 8  | 6             | 8    | 5       | 6    | 33.0 | 39.0  | 39.0  | 39.0  | 6       | 14   | 41.0 | 6       | 14               | 29.5 | 5       | 6.5  | 6       | 7.5  | 31.5 | 65    | 77    | 89    | 6       | 6.5  | 38.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 19               | 21 | 8  | 8  | 6             | 8    | 5       | 6    | 32.9 | 39.0  | 39.0  | 39.0  | 6       | 14   | 41.0 | 6       | 14               | 29.5 | 5       | 6    | 6       | 7.5  | 31.4 | 65    | 77    | 89    | 6       | 6.5  | 38.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 20               | 22 | 9  | 8  | 6             | 8    | 5       | 6.5  | 33.8 | 40.0  | 40.0  | 40.0  | 6       | 15   | 40.0 | 6       | 15               | 29.0 | 5       | 6    | 5       | 6    | 29.0 | 66    | 78    | 90    | 6       | 6.5  | 38.0      | 5                                  | 12   | 5       | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 7 FT |                  |    |    |    |               |      |         |      |      |         |       |      |         |      |      |         |                  |         |      |      |      |         |     |       |         |      |         |      |           |      | HEIGHT (HT) = 7 FT OR 8 FT |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|---------|-------|------|---------|------|------|---------|------------------|---------|------|------|------|---------|-----|-------|---------|------|---------|------|-----------|------|----------------------------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |         |       |      |         |      |      |         | BOTTOM SLAB BARS |         |      |      |      |         |     |       |         |      |         |      | WALL BARS |      |                            |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      | H1 BARS |       |      | H2 BARS |      |      | A2 BARS |                  | J4 BARS |      |      |      | H3 BARS |     |       | B1 BARS |      | B2 BARS |      |           |      |                            |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2      |       | SIZE | SPA.    | C5   | SIZE | SPA.    | C6               | SIZE    | SPA. | SIZE | SPA. | C4      | K3  |       | SIZE    | SPA. | C7      | SIZE | SPA.      | SIZE | SPA.                       | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=7'   | HT=8' |      |         |      |      |         |                  |         |      |      |      |         |     | HT=7' | HT=8'   |      |         |      |           |      |                            |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 12               | 9  | 8  | 8  | 5             | 7.5  | 4       | 8.5  | 38.1 | 28.0    | 28.0  | 4    | 15      | 73.0 | 4    | 15      | 25.5             | 4       | 7.5  | 4    | 7    | 56.0    | 89  | 101   | 5       | 7    | 37.5    | 5    | 12        | 5    | 12                         | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 12               | 9  | 8  | 8  | 5             | 7.5  | 4       | 8    | 38.1 | 28.0    | 28.0  | 4    | 15      | 73.0 | 4    | 15      | 25.0             | 4       | 7    | 4    | 6.5  | 51.4    | 89  | 101   | 5       | 7    | 37.5    | 5    | 12        | 5    | 12                         | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                | 9  | 8  | 8  | 4             | 6    | 5       | 6.5  | 40.1 | 24.0    | 24.0  | 5    | 17      | 75.0 | 5    | 17      | 23.5             | 4       | 7.5  | 4    | 6.5  | 47.8    | 89  | 101   | 5       | 7    | 37.0    | 5    | 12        | 5    | 12                         | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                | 9  | 8  | 8  | 4             | 7    | 5       | 6.5  | 44.6 | 24.0    | 24.0  | 5    | 17      | 39.5 | 5    | 17      | 23.5             | 4       | 7    | 4    | 6    | 43.5    | 89  | 101   | 5       | 6.5  | 36.0    | 5    | 12        | 5    | 12                         | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                | 9  | 9  | 8  | 4             | 7    | 4       | 6    | 40.1 | 24.0    | 24.0  | 5    | 16      | 37.0 | 5    | 16      | 23.5             | 4       | 6.5  | 4    | 6.5  | 40.4    | 89  | 101   | 5       | 6    | 35.5    | 5    | 12        | 5    | 12                         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                | 10 | 9  | 8  | 4             | 6.5  | 5       | 6    | 38.4 | 24.0    | 24.0  | 5    | 15      | 36.0 | 5    | 15      | 24.0             | 4       | 6.5  | 4    | 7    | 39.5    | 90  | 102   | 5       | 6.5  | 35.5    | 5    | 12        | 5    | 12                         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 9                | 10 | 9  | 8  | 4             | 6    | 5       | 6.5  | 37.8 | 25.0    | 25.0  | 5    | 15      | 35.5 | 5    | 15      | 24.0             | 5       | 9    | 4    | 6    | 38.1    | 90  | 102   | 5       | 6    | 35.0    | 5    | 12        | 5    | 12                         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 9                | 11 | 9  | 8  | 5             | 8.5  | 5       | 6    | 37.1 | 25.0    | 25.0  | 5    | 14      | 35.0 | 5    | 14      | 23.5             | 5       | 9    | 4    | 6    | 37.9    | 91  | 103   | 5       | 6    | 35.5    | 5    | 12        | 5    | 12                         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 9                | 11 | 9  | 8  | 5             | 8.5  | 5       | 6    | 34.8 | 25.0    | 25.0  | 5    | 14      | 34.0 | 5    | 14      | 23.5             | 5       | 8.5  | 4    | 6    | 35.3    | 91  | 103   | 5       | 6    | 35.0    | 5    | 12        | 5    | 12                         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 10               | 12 | 9  | 8  | 5             | 8.5  | 5       | 7    | 34.9 | 26.0    | 30.0  | 5    | 14      | 34.0 | 5    | 14      | 23.5             | 5       | 8.5  | 5    | 8.5  | 35.3    | 92  | 104   | 5       | 6    | 35.0    | 5    | 12        | 5    | 12                         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 11               | 13 | 9  | 8  | 5             | 8    | 5       | 7.5  | 34.9 | 27.0    | 31.0  | 5    | 14      | 34.0 | 5    | 14      | 23.0             | 5       | 8.5  | 5    | 8    | 35.4    | 93  | 105   | 6       | 8    | 38.0    | 5    | 12        | 5    | 12                         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 11               | 13 | 9  | 8  | 5             | 7    | 5       | 6.5  | 34.8 | 27.0    | 31.0  | 5    | 13      | 34.0 | 5    | 13      | 23.5             | 5       | 7.5  | 5    | 8    | 35.1    | 93  | 105   | 6       | 7.5  | 38.0    | 5    | 12        | 5    | 11.5                       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 12               | 14 | 9  | 8  | 5             | 7.5  | 5       | 7    | 34.8 | 28.0    | 32.0  | 5    | 13      | 34.0 | 5    | 13      | 23.0             | 5       | 8    | 5    | 8    | 35.4    | 94  | 106   | 6       | 7.5  | 38.0    | 5    | 12        | 5    | 10.5                       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 13               | 15 | 9  | 8  | 5             | 7.5  | 5       | 7    | 34.9 | 29.0    | 33.0  | 5    | 12      | 33.5 | 5    | 12      | 22.0             | 5       | 8    | 5    | 8    | 35.6    | 95  | 107   | 6       | 7.5  | 38.0    | 5    | 12        | 5    | 9.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 13               | 15 | 9  | 8  | 5             | 6.5  | 5       | 6.5  | 34.8 | 33.0    | 33.0  | 5    | 12      | 33.5 | 5    | 12      | 22.5             | 5       | 7    | 5    | 7.5  | 35.4    | 95  | 107   | 6       | 7    | 38.0    | 5    | 12        | 5    | 9                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 14               | 16 | 9  | 8  | 5             | 7    | 5       | 6.5  | 34.9 | 34.0    | 34.0  | 5    | 12      | 33.0 | 5    | 12      | 21.5             | 5       | 7.5  | 5    | 7.5  | 35.6    | 96  | 108   | 6       | 7    | 38.0    | 5    | 12        | 5    | 8.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 15               | 17 | 9  | 8  | 5             | 7    | 5       | 6    | 40.0 | 35.0    | 35.0  | 6    | 16      | 41.5 | 6    | 16      | 29.5             | 5       | 7.5  | 5    | 7.5  | 36.0    | 97  | 109   | 6       | 7.5  | 38.0    | 5    | 12        | 5    | 8.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 15               | 17 | 10 | 8  | 5             | 6.5  | 5       | 7    | 40.5 | 35.0    | 35.0  | 6    | 16      | 41.5 | 6    | 16      | 30.0             | 5       | 6.5  | 5    | 7.5  | 36.0    | 97  | 109   | 6       | 7    | 38.0    | 5    | 12        | 5    | 8.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 16               | 18 | 10 | 8  | 5             | 6.5  | 5       | 6.5  | 40.6 | 36.0    | 36.0  | 6    | 15      | 41.0 | 6    | 15      | 29.5             | 5       | 7    | 5    | 7.5  | 36.4    | 98  | 110   | 6       | 7    | 38.0    | 5    | 12        | 5    | 8                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 16               | 19 | 11 | 8  | 5             | 6    | 5       | 7    | 41.3 | 32.0    | 36.0  | 6    | 15      | 40.5 | 6    | 15      | 29.5             | 5       | 7    | 5    | 7    | 36.8    | 99  | 111   | 6       | 7    | 38.0    | 5    | 12        | 5    | 8.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 17               | 19 | 11 | 8  | 5             | 6    | 5       | 7    | 41.3 | 33.0    | 37.0  | 6    | 15      | 40.0 | 6    | 15      | 29.0             | 5       | 6.5  | 5    | 7    | 36.8    | 99  | 111   | 6       | 6.5  | 38.0    | 5    | 12        | 5    | 8                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 17               | 20 | 11 | 8  | 5             | 6    | 5       | 6.5  | 41.4 | 37.0    | 37.0  | 6    | 15      | 40.0 | 6    | 15      | 29.0             | 5       | 6.5  | 5    | 7    | 36.9    | 100 | 112   | 6       | 7    | 38.0    | 5    | 12        | 5    | 7.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 18               | 20 | 11 | 8  | 6             | 8.5  | 5       | 6    | 41.4 | 38.0    | 38.0  | 6    | 16      | 39.5 | 6    | 16      | 29.0             | 5       | 6.5  | 5    | 7    | 37.0    | 100 | 112   | 6       | 6.5  | 38.0    | 5    | 12        | 5    | 7.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 18               | 21 | 12 | 8  | 6             | 8    | 5       | 6.5  | 42.1 | 38.0    | 38.0  | 6    | 15      | 39.5 | 6    | 15      | 29.0             | 5       | 6.5  | 5    | 7    | 37.4    | 101 | 113   | 6       | 6.5  | 38.0    | 5    | 12        | 5    | 7.5                        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 19               | 21 | 12 | 8  | 6             | 8    | 5       | 6.5  | 42.0 | 39.0    | 39.0  | 6    | 16      | 39.0 | 6    | 16      | 29.0             | 5       | 6    | 5    | 6.5  | 37.5    | 101 | 113   | 6       | 6.5  | 38.0    | 5    | 12        | 5    | 7                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 19               | 22 | 12 | 8  | 6             | 7.5  | 5       | 6    | 42.1 | 39.0    | 39.0  | 6    | 15      | 39.0 | 6    | 15      | 29.0             | 5       | 6    | 5    | 6.5  | 37.6    | 102 | 114   | 6       | 6.5  | 38.0    | 5    | 12        | 5    | 7                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| SPAN (S) = 7 FT |                  |    |    |    |               |      |         |      |      |         |        |      |         |      |      |         |                  |         |      |      |      |         |       |        |         |      |         |      |           | HEIGHT (HT) = 9 FT OR 10 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|---------|--------|------|---------|------|------|---------|------------------|---------|------|------|------|---------|-------|--------|---------|------|---------|------|-----------|-----------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |         |        |      |         |      |      |         | BOTTOM SLAB BARS |         |      |      |      |         |       |        |         |      |         |      | WALL BARS |                             |      |    |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      | H1 BARS |        |      | H2 BARS |      |      | A2 BARS |                  | J4 BARS |      |      |      | H3 BARS |       |        | B1 BARS |      | B2 BARS |      |           |                             |      |    |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2      |        | SIZE | SPA.    | C5   | SIZE | SPA.    | C6               | SIZE    | SPA. | SIZE | SPA. | C4      | K3    |        | SIZE    | SPA. | C7      | SIZE | SPA.      | SIZE                        | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=9'   | HT=10' |      |         |      |      |         |                  |         |      |      |      |         | HT=9' | HT=10' |         |      |         |      |           |                             |      |    |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 12               | 9  | 8  | 8  | 5             | 7.5  | 4       | 6    | 38.1 | 28.0    | 28.0   | 4    | 16      | 73.0 | 4    | 16      | 26.0             | 4       | 7    | 6    | 7    | 68.1    | 113   | 125    | 5       | 7    | 38.0    | 5    | 12        | 5                           | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 12               | 9  | 8  | 8  | 5             | 7.5  | 5       | 8.5  | 38.1 | 28.0    | 32.0   | 4    | 15      | 73.0 | 4    | 15      | 25.0             | 4       | 6.5  | 6    | 6.5  | 64.9    | 113   | 125    | 5       | 6.5  | 37.5    | 5    | 12        | 5                           | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                | 9  | 9  | 8  | 4             | 6    | 5       | 6    | 40.8 | 24.0    | 28.0   | 5    | 17      | 75.5 | 5    | 17      | 23.5             | 4       | 7.5  | 5    | 6    | 57.8    | 113   | 125    | 5       | 7    | 37.0    | 5    | 12        | 5                           | 11.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                | 9  | 10 | 8  | 4             | 7    | 5       | 6.5  | 55.0 | 24.0    | 28.0   | 5    | 17      | 39.5 | 5    | 17      | 23.0             | 4       | 7    | 5    | 6.5  | 51.9    | 113   | 125    | 5       | 6.5  | 36.0    | 5    | 12        | 5                           | 11.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                | 9  | 10 | 8  | 4             | 7    | 5       | 6    | 49.0 | 28.0    | 28.0   | 5    | 16      | 37.0 | 5    | 16      | 23.5             | 4       | 6.5  | 5    | 6    | 49.3    | 113   | 125    | 5       | 6    | 35.5    | 5    | 12        | 5                           | 10.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 8                | 10 | 10 | 8  | 4             | 6.5  | 6       | 7    | 49.0 | 28.0    | 28.0   | 5    | 15      | 36.0 | 5    | 15      | 24.0             | 4       | 6.5  | 5    | 6    | 49.1    | 114   | 126    | 5       | 6    | 35.5    | 5    | 12        | 5                           | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 9                | 10 | 10 | 8  | 4             | 6    | 5       | 6    | 46.1 | 29.0    | 29.0   | 5    | 16      | 35.5 | 5    | 16      | 23.5             | 5       | 9    | 6    | 7    | 50.3    | 114   | 126    | 5       | 6    | 35.0    | 5    | 12        | 5                           | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 9                | 11 | 10 | 8  | 5             | 9    | 5       | 6    | 44.6 | 29.0    | 29.0   | 5    | 15      | 35.0 | 5    | 15      | 23.5             | 5       | 9    | 6    | 7.5  | 50.6    | 115   | 127    | 5       | 6    | 35.0    | 5    | 12        | 5                           | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 9                | 11 | 10 | 8  | 5             | 9    | 5       | 6    | 41.5 | 29.0    | 29.0   | 5    | 14      | 34.0 | 5    | 14      | 23.5             | 5       | 8.5  | 5    | 6    | 44.0    | 115   | 127    | 5       | 6    | 35.0    | 5    | 12        | 5                           | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 10               | 12 | 10 | 8  | 5             | 8.5  | 5       | 6.5  | 42.0 | 30.0    | 30.0   | 5    | 15      | 34.0 | 5    | 15      | 23.5             | 5       | 8.5  | 5    | 6    | 44.3    | 116   | 128    | 5       | 6    | 35.0    | 5    | 12        | 5                           | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 11               | 13 | 10 | 8  | 5             | 8.5  | 5       | 6    | 42.4 | 31.0    | 31.0   | 5    | 14      | 33.5 | 5    | 14      | 22.5             | 5       | 8.5  | 5    | 6    | 44.6    | 117   | 129    | 6       | 8    | 38.0    | 5    | 12        | 5                           | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 11               | 13 | 10 | 8  | 5             | 7.5  | 5       | 6    | 42.1 | 31.0    | 31.0   | 5    | 14      | 33.5 | 5    | 14      | 23.5             | 5       | 7.5  | 6    | 7    | 47.3    | 117   | 129    | 6       | 7.5  | 38.0    | 5    | 12        | 5                           | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 12               | 14 | 10 | 8  | 5             | 7.5  | 5       | 6    | 42.5 | 32.0    | 32.0   | 5    | 13      | 33.5 | 5    | 13      | 22.5             | 5       | 8    | 6    | 7.5  | 47.6    | 118   | 130    | 6       | 7.5  | 38.0    | 5    | 12        | 5                           | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 13               | 15 | 10 | 8  | 5             | 7.5  | 6       | 7    | 45.8 | 33.0    | 37.0   | 5    | 12      | 33.0 | 5    | 12      | 21.5             | 5       | 8    | 6    | 7.5  | 47.9    | 119   | 131    | 6       | 7.5  | 38.0    | 5    | 12        | 5                           | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 13               | 16 | 11 | 8  | 5             | 7    | 5       | 6    | 42.9 | 33.0    | 33.0   | 5    | 12      | 32.5 | 5    | 12      | 22.0             | 5       | 8    | 5    | 6.5  | 45.3    | 120   | 132    | 6       | 7.5  | 38.0    | 5    | 12        | 5                           | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 14               | 16 | 11 | 8  | 5             | 7    | 6       | 7.5  | 46.1 | 34.0    | 34.0   | 5    | 12      | 32.0 | 5    | 12      | 21.0             | 5       | 7.5  | 5    | 6    | 45.0    | 120   | 132    | 6       | 7    | 38.0    | 5    | 12        | 5                           | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 14               | 17 | 12 | 8  | 5             | 7    | 5       | 6    | 43.4 | 34.0    | 34.0   | 5    | 12      | 32.0 | 5    | 12      | 21.5             | 5       | 7.5  | 5    | 6.5  | 45.4    | 121   | 133    | 6       | 7    | 38.0    | 5    | 12        | 5                           | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 15               | 17 | 12 | 8  | 5             | 6.5  | 6       | 8.5  | 52.6 | 35.0    | 35.0   | 6    | 16      | 40.5 | 6    | 16      | 29.5             | 5       | 6.5  | 5    | 6.5  | 45.1    | 121   | 133    | 6       | 7    | 38.0    | 5    | 12        | 5                           | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 15               | 18 | 13 | 8  | 5             | 6    | 6       | 8.5  | 52.9 | 35.0    | 35.0   | 6    | 16      | 40.0 | 6    | 16      | 29.5             | 5       | 7    | 5    | 6    | 45.5    | 122   | 134    | 6       | 7    | 38.0    | 5    | 12        | 5                           | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 16               | 19 | 13 | 8  | 5             | 6.5  | 6       | 8    | 53.1 | 36.0    | 36.0   | 6    | 16      | 39.5 | 6    | 16      | 29.0             | 5       | 7    | 5    | 6    | 45.9    | 123   | 135    | 6       | 7    | 38.0    | 5    | 12        | 5                           | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 17               | 19 | 13 | 8  | 5             | 6    | 6       | 7.5  | 53.4 | 37.0    | 37.0   | 5    | 12      | 35.0 | 5    | 12      | 25.0             | 5       | 6.5  | 5    | 6    | 45.8    | 123   | 135    | 6       | 6.5  | 38.0    | 5    | 12        | 5                           | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 17               | 20 | 14 | 8  | 5             | 6    | 6       | 8    | 53.8 | 37.0    | 37.0   | 6    | 16      | 39.0 | 6    | 16      | 29.0             | 5       | 6.5  | 5    | 6    | 46.1    | 124   | 136    | 6       | 6.5  | 38.5    | 5    | 12        | 5                           | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 17               | 20 | 14 | 8  | 6             | 8.5  | 6       | 7.5  | 53.6 | 37.0    | 37.0   | 6    | 15      | 39.0 | 6    | 15      | 29.0             | 5       | 6    | 5    | 6    | 46.1    | 124   | 136    | 6       | 6.5  | 38.5    | 5    | 12        | 5                           | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 18               | 21 | 14 | 8  | 6             | 8    | 6       | 7    | 53.9 | 38.0    | 38.0   | 6    | 17      | 38.5 | 6    | 17      | 29.0             | 5       | 6.5  | 5    | 6    | 46.5    | 125   | 137    | 6       | 6.5  | 38.0    | 5    | 12        | 5                           | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 18               | 22 | 15 | 8  | 6             | 8    | 6       | 7.5  | 54.3 | 38.0    | 42.0   | 6    | 16      | 38.5 | 6    | 16      | 29.0             | 5       | 6.5  | 6    | 8    | 49.9    | 126   | 138    | 6       | 6.5  | 38.5    | 5    | 12        | 5                           | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 18               | 22 | 15 | 8  | 6             | 7.5  | 6       | 7.5  | 54.3 | 38.0    | 42.0   | 6    | 15      | 38.5 | 6    | 15      | 29.0             | 5       | 6    | 6    | 8    | 49.9    | 126   | 138    | 6       | 6    | 38.5    | 5    | 12        | 6                           | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |



GENERAL NOTES:

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI  
DENNIS W. HECKMAN  
NUMBER PE-27141  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

CONCRETE  
DOUBLE BOX CULVERT

MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS

SPAN (S): 7 FEET  
HEIGHT (HT): 9 THRU 10 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

703.47

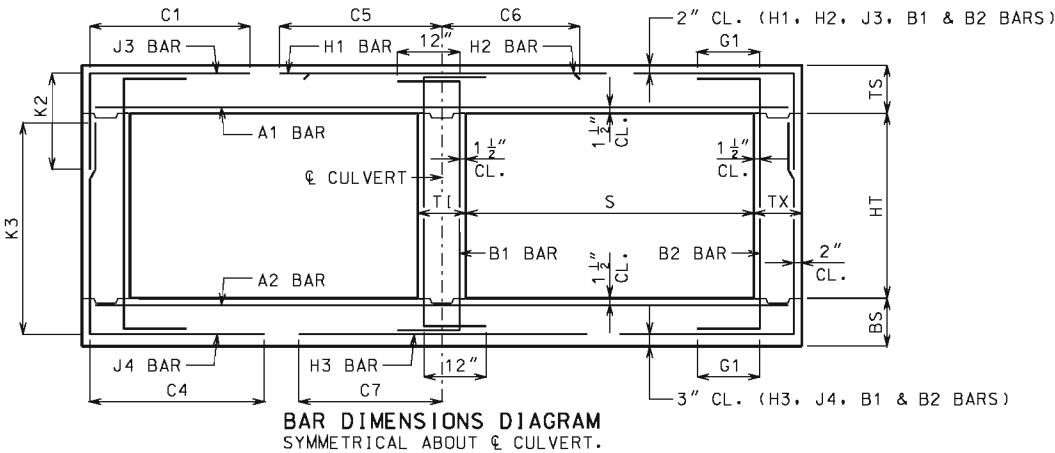
SHEET NO.  
9 OF 27

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 8 FT |                  |    |    |    |               |      |         |      |      |       |       |       |         |      |      |         |                  |      |         |      |         |      |      |       |       |       |         |      |           | HEIGHT (HT) = 4 FT OR 5 FT OR 6 FT |      |         |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|-------|-------|-------|---------|------|------|---------|------------------|------|---------|------|---------|------|------|-------|-------|-------|---------|------|-----------|------------------------------------|------|---------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |       |         |      |      |         | BOTTOM SLAB BARS |      |         |      |         |      |      |       |       |       |         |      | WALL BARS |                                    |      |         |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |       | H1 BARS |      |      | H2 BARS |                  |      | A2 BARS |      | J4 BARS |      |      |       |       |       | H3 BARS |      |           | B1 BARS                            |      | B2 BARS |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |       | SIZE    | SPA. | C5   | SIZE    | SPA.             | C6   | SIZE    | SPA. | SIZE    | SPA. | C4   | K3    |       |       | SIZE    | SPA. | C7        | SIZE                               | SPA. | SIZE    | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=4' | HT=5' | HT=6' |         |      |      |         |                  |      |         |      |         |      |      | HT=4' | HT=5' | HT=6' |         |      |           |                                    |      |         |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 12               | 9  | 8  | 8  | 5             | 7    | 4       | 8.5  | 41.8 | 28.0  | 28.0  | 28.0  | 4       | 12   | 81.5 | 4       | 12               | 26.5 | 4       | 7    | 4       | 8    | 43.0 | 53    | 65    | 77    | 5       | 6.5  | 41.0      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 13               | 9  | 8  | 8  | 5             | 7.5  | 4       | 7.5  | 41.8 | 29.0  | 29.0  | 29.0  | 4       | 13   | 81.5 | 4       | 13               | 26.5 | 4       | 6.5  | 4       | 7    | 39.1 | 53    | 65    | 77    | 5       | 6    | 40.5      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                | 8  | 8  | 8  | 4             | 6    | 5       | 6.5  | 36.4 | 24.0  | 24.0  | 24.0  | 5       | 15   | 51.0 | 5       | 15               | 26.5 | 4       | 6    | 4       | 6    | 35.3 | 52    | 64    | 76    | 6       | 6.5  | 42.5      | 5                                  | 9.5  | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                | 9  | 8  | 8  | 4             | 6    | 5       | 6.5  | 34.3 | 24.0  | 24.0  | 24.0  | 5       | 15   | 42.5 | 5       | 15               | 26.0 | 4       | 6    | 4       | 7.5  | 33.1 | 53    | 65    | 77    | 6       | 7    | 42.0      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                | 9  | 8  | 8  | 4             | 6    | 5       | 6    | 33.1 | 24.0  | 24.0  | 24.0  | 5       | 13   | 40.5 | 5       | 13               | 25.5 | 5       | 8.5  | 4       | 7    | 31.6 | 53    | 65    | 77    | 6       | 6.5  | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 9                | 10 | 8  | 8  | 5             | 8.5  | 4       | 6    | 31.9 | 25.0  | 25.0  | 25.0  | 5       | 14   | 39.5 | 5       | 14               | 25.5 | 5       | 8    | 4       | 8    | 30.4 | 54    | 66    | 78    | 6       | 7    | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 10               | 11 | 8  | 8  | 5             | 8    | 4       | 6    | 30.6 | 26.0  | 26.0  | 26.0  | 5       | 14   | 39.0 | 5       | 14               | 25.0 | 5       | 8    | 4       | 8    | 29.3 | 55    | 67    | 79    | 6       | 7    | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 11               | 12 | 8  | 8  | 5             | 8    | 4       | 6    | 29.8 | 27.0  | 27.0  | 27.0  | 5       | 14   | 38.5 | 5       | 14               | 25.0 | 5       | 7.5  | 4       | 7.5  | 28.6 | 56    | 68    | 80    | 6       | 7    | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 11               | 13 | 8  | 8  | 5             | 7.5  | 5       | 8.5  | 29.6 | 27.0  | 27.0  | 27.0  | 5       | 12   | 38.5 | 5       | 12               | 25.0 | 5       | 7.5  | 4       | 8    | 28.0 | 57    | 69    | 81    | 6       | 7    | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 12               | 13 | 8  | 8  | 5             | 7.5  | 4       | 6    | 27.5 | 28.0  | 28.0  | 28.0  | 5       | 13   | 37.5 | 5       | 13               | 25.0 | 5       | 7    | 4       | 7.5  | 26.8 | 57    | 69    | 81    | 6       | 7    | 41.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 12               | 14 | 8  | 8  | 5             | 7    | 5       | 8.5  | 27.8 | 28.0  | 28.0  | 28.0  | 5       | 12   | 37.5 | 5       | 12               | 25.0 | 5       | 7    | 4       | 7.5  | 26.4 | 58    | 70    | 82    | 6       | 7    | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 13               | 15 | 8  | 8  | 5             | 6.5  | 6       | 8.5  | 27.4 | 29.0  | 29.0  | 29.0  | 5       | 12   | 37.5 | 5       | 12               | 25.0 | 5       | 7    | 4       | 7    | 26.4 | 59    | 71    | 83    | 6       | 7    | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 14               | 16 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 27.3 | 30.0  | 30.0  | 30.0  | 5       | 12   | 37.5 | 5       | 12               | 24.5 | 5       | 7    | 4       | 6.5  | 26.5 | 60    | 72    | 84    | 6       | 7    | 41.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 15               | 16 | 8  | 8  | 5             | 6.5  | 5       | 8    | 31.9 | 31.0  | 31.0  | 31.0  | 6       | 16   | 46.5 | 6       | 16               | 33.0 | 5       | 6.5  | 4       | 6.5  | 26.6 | 60    | 72    | 84    | 6       | 7    | 41.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 16               | 17 | 8  | 8  | 5             | 6    | 5       | 7    | 31.8 | 32.0  | 32.0  | 32.0  | 6       | 15   | 46.0 | 6       | 15               | 32.0 | 5       | 6.5  | 4       | 6    | 26.8 | 61    | 73    | 85    | 6       | 6.5  | 41.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 16               | 18 | 8  | 8  | 5             | 6    | 5       | 7    | 32.0 | 32.0  | 32.0  | 36.0  | 6       | 15   | 46.0 | 6       | 15               | 33.0 | 5       | 6.5  | 5       | 6.5  | 26.6 | 62    | 74    | 86    | 6       | 6.5  | 41.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 17               | 19 | 8  | 8  | 5             | 6    | 5       | 6.5  | 31.9 | 37.0  | 37.0  | 37.0  | 6       | 14   | 45.5 | 6       | 14               | 32.0 | 5       | 6.5  | 5       | 6.5  | 26.8 | 63    | 75    | 87    | 6       | 6.5  | 41.0      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 18               | 19 | 8  | 8  | 6             | 8.5  | 5       | 6.5  | 31.8 | 38.0  | 38.0  | 38.0  | 6       | 13   | 45.5 | 6       | 13               | 31.0 | 5       | 6    | 5       | 6.5  | 26.9 | 63    | 75    | 87    | 6       | 6    | 41.0      | 5                                  | 12   | 5       | 11   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 18               | 20 | 8  | 8  | 6             | 8    | 5       | 6.5  | 31.9 | 38.0  | 38.0  | 38.0  | 6       | 13   | 45.5 | 6       | 13               | 32.0 | 5       | 6    | 5       | 6    | 26.9 | 64    | 76    | 88    | 6       | 6    | 41.0      | 5                                  | 12   | 5       | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 19               | 21 | 8  | 8  | 6             | 8    | 5       | 6    | 32.0 | 39.0  | 39.0  | 39.0  | 6       | 13   | 45.0 | 6       | 13               | 31.0 | 5       | 6    | 6       | 7.5  | 30.1 | 65    | 77    | 89    | 6       | 6    | 41.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 20               | 22 | 8  | 8  | 6             | 7.5  | 6       | 7.5  | 36.0 | 44.0  | 44.0  | 44.0  | 6       | 13   | 44.5 | 6       | 13               | 30.5 | 5       | 6    | 6       | 7    | 30.4 | 66    | 78    | 90    | 6       | 6    | 41.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 20               | 22 | 8  | 8  | 6             | 7.5  | 6       | 7.5  | 36.0 | 44.0  | 44.0  | 44.0  | 6       | 12   | 44.5 | 6       | 12               | 30.5 | 6       | 8.5  | 6       | 7    | 30.3 | 66    | 78    | 90    | 6       | 6    | 41.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 21               | 23 | 8  | 8  | 6             | 7.5  | 6       | 7    | 36.0 | 45.0  | 45.0  | 45.0  | 6       | 12   | 43.5 | 6       | 12               | 30.0 | 6       | 8.5  | 6       | 6.5  | 30.5 | 67    | 79    | 91    | 6       | 6    | 41.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 21               | 23 | 8  | 8  | 6             | 7    | 6       | 7    | 36.0 | 45.0  | 45.0  | 45.0  | 6       | 12   | 43.5 | 6       | 12               | 30.0 | 6       | 8    | 6       | 6.5  | 30.5 | 67    | 79    | 91    | 7       | 7.5  | 44.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 22               | 24 | 8  | 8  | 6             | 7    | 6       | 6.5  | 36.1 | 46.0  | 46.0  | 46.0  | 6       | 12   | 43.0 | 6       | 12               | 30.0 | 6       | 8    | 6       | 6    | 30.8 | 68    | 80    | 92    | 7       | 7.5  | 44.0      | 5                                  | 12   | 5       | 9    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 22               | 24 | 8  | 8  | 6             | 6.5  | 6       | 6.5  | 36.1 | 46.0  | 46.0  | 46.0  | 6       | 12   | 43.0 | 6       | 12               | 30.0 | 6       | 7.5  | 6       | 6    | 30.8 | 68    | 80    | 92    | 7       | 7.5  | 44.0      | 5                                  | 12   | 5       | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 8 FT |                     |    |    |    |               |      |         |      |      |       |         |       |         |      |         |      |                  |      |      |      |         |       |         |       |         |      |    |      |           |      |      | HEIGHT (HT) = 7 FT OR 8 FT OR 9 FT |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|-------|---------|------|---------|------|------------------|------|------|------|---------|-------|---------|-------|---------|------|----|------|-----------|------|------|------------------------------------|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |       |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |       |         |       |         |      |    |      | WALL BARS |      |      |                                    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |       | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |       | B1 BARS |       | B2 BARS |      |    |      |           |      |      |                                    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         |       | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | C4      | K3    |         |       | SIZE    | SPA. | C7 | SIZE | SPA.      | SIZE | SPA. | G1                                 |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    |               |      |         |      |      | HT=7' | HT=8'   | HT=9' |         |      |         |      |                  |      |      |      |         | HT=7' | HT=8'   | HT=9' |         |      |    |      |           |      |      |                                    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 12                  | 9  | 8  | 8  | 5             | 7    | 4       | 6.5  | 41.8 | 28.0  | 28.0    | 28.0  | 4       | 12   | 81.5    | 4    | 12               | 27.5 | 4    | 6    | 5       | 6.5   | 61.6    | 89    | 101     | 113  | 5  | 6    | 41.0      | 5    | 12   | 5                                  | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 13                  | 10 | 8  | 8  | 5             | 7    | 4       | 6.5  | 41.8 | 29.0  | 29.0    | 29.0  | 4       | 13   | 81.5    | 4    | 13               | 27.0 | 4    | 6.5  | 4       | 6     | 58.3    | 90    | 102     | 114  | 5  | 6.5  | 40.5      | 5    | 12   | 5                                  | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 9  | 8  | 8  | 4             | 6    | 6       | 7.5  | 43.8 | 24.0  | 24.0    | 28.0  | 5       | 15   | 83.5    | 5    | 15               | 27.0 | 4    | 6    | 5       | 6     | 52.3    | 89    | 101     | 113  | 5  | 6    | 40.0      | 5    | 11   | 5                                  | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 10 | 8  | 8  | 4             | 6    | 6       | 7.5  | 51.4 | 24.0  | 24.0    | 28.0  | 5       | 15   | 43.0    | 5    | 15               | 26.0 | 4    | 6.5  | 5       | 6     | 49.0    | 90    | 102     | 114  | 5  | 6.5  | 39.5      | 5    | 12   | 5                                  | 12  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 11 | 8  | 8  | 4             | 6    | 6       | 7.5  | 46.6 | 24.0  | 24.0    | 28.0  | 5       | 13   | 40.5    | 5    | 13               | 25.5 | 4    | 6.5  | 5       | 6.5   | 46.3    | 91    | 103     | 115  | 5  | 6    | 39.0      | 5    | 12   | 5                                  | 12  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 9                   | 11 | 8  | 8  | 5             | 8.5  | 6       | 7    | 45.3 | 25.0  | 25.0    | 29.0  | 5       | 14   | 39.5    | 5    | 14               | 25.5 | 5    | 8.5  | 5       | 6     | 43.6    | 91    | 103     | 115  | 5  | 6    | 38.5      | 5    | 12   | 5                                  | 11  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 10                  | 12 | 8  | 8  | 5             | 8    | 6       | 7    | 44.4 | 26.0  | 30.0    | 30.0  | 5       | 14   | 39.0    | 5    | 14               | 25.0 | 5    | 8.5  | 5       | 6     | 42.5    | 92    | 104     | 116  | 5  | 6    | 38.5      | 5    | 12   | 5                                  | 10  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 11                  | 12 | 8  | 8  | 5             | 8    | 6       | 7    | 43.5 | 27.0  | 31.0    | 35.0  | 5       | 14   | 38.5    | 5    | 14               | 25.0 | 5    | 7.5  | 6       | 7     | 44.4    | 92    | 104     | 116  | 6  | 7    | 41.5      | 5    | 12   | 5                                  | 9.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 11                  | 13 | 8  | 8  | 5             | 7.5  | 6       | 6.5  | 42.9 | 27.0  | 31.0    | 35.0  | 5       | 12   | 38.0    | 5    | 12               | 25.0 | 5    | 7.5  | 6       | 7     | 44.0    | 93    | 105     | 117  | 6  | 7.5  | 41.5      | 5    | 12   | 5                                  | 9.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 12                  | 13 | 8  | 8  | 5             | 7.5  | 5       | 6    | 37.1 | 28.0  | 32.0    | 32.0  | 5       | 13   | 37.5    | 5    | 13               | 25.0 | 5    | 7    | 6       | 7.5   | 41.1    | 93    | 105     | 117  | 6  | 7    | 41.0      | 5    | 12   | 5                                  | 9.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 12                  | 14 | 8  | 8  | 5             | 7    | 6       | 7    | 39.9 | 32.0  | 32.0    | 36.0  | 5       | 12   | 37.5    | 5    | 12               | 25.0 | 5    | 7    | 6       | 7.5   | 41.1    | 94    | 106     | 118  | 6  | 7    | 41.0      | 5    | 12   | 5                                  | 9.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 13                  | 15 | 8  | 8  | 5             | 6.5  | 6       | 7    | 39.9 | 33.0  | 33.0    | 37.0  | 5       | 12   | 37.0    | 5    | 12               | 25.0 | 5    | 7    | 6       | 7.5   | 41.3    | 95    | 107     | 119  | 6  | 7    | 41.0      | 5    | 12   | 5                                  | 9.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 14                  | 16 | 8  | 8  | 5             | 6.5  | 6       | 7    | 40.0 | 34.0  | 34.0    | 38.0  | 5       | 12   | 37.0    | 5    | 12               | 24.0 | 5    | 7    | 6       | 7     | 41.4    | 96    | 108     | 120  | 6  | 7    | 41.0      | 5    | 12   | 5                                  | 9   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 15                  | 16 | 9  | 8  | 5             | 6.5  | 5       | 6    | 42.4 | 35.0  | 35.0    | 35.0  | 6       | 16   | 45.5    | 6    | 16               | 32.0 | 5    | 6.5  | 5       | 6     | 38.5    | 96    | 108     | 120  | 6  | 7    | 41.0      | 5    | 12   | 5                                  | 8.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 15                  | 17 | 10 | 8  | 5             | 6    | 5       | 6.5  | 42.9 | 31.0  | 35.0    | 35.0  | 6       | 16   | 45.5    | 6    | 16               | 33.0 | 5    | 6.5  | 5       | 7.5   | 38.8    | 97    | 109     | 121  | 6  | 6.5  | 41.5      | 5    | 12   | 5                                  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 16                  | 18 | 11 | 8  | 5             | 6    | 5       | 6.5  | 43.6 | 32.0  | 36.0    | 36.0  | 6       | 15   | 44.5    | 6    | 15               | 31.5 | 5    | 6.5  | 5       | 7     | 39.1    | 98    | 110     | 122  | 6  | 6.5  | 41.5      | 5    | 12   | 5                                  | 8.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 17                  | 19 | 11 | 8  | 5             | 6    | 5       | 6.5  | 43.6 | 33.0  | 37.0    | 37.0  | 6       | 14   | 44.0    | 6    | 14               | 31.0 | 5    | 6.5  | 5       | 7     | 39.4    | 99    | 111     | 123  | 6  | 6    | 41.5      | 5    | 12   | 5                                  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 17                  | 20 | 11 | 8  | 6             | 8    | 5       | 6    | 43.8 | 37.0  | 37.0    | 37.0  | 6       | 14   | 44.0    | 6    | 14               | 31.5 | 5    | 6.5  | 5       | 7     | 39.5    | 100   | 112     | 124  | 6  | 6    | 41.5      | 5    | 12   | 5                                  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 18                  | 20 | 12 | 8  | 6             | 8    | 5       | 6.5  | 44.3 | 38.0  | 38.0    | 38.0  | 6       | 13   | 43.5    | 6    | 13               | 30.5 | 5    | 6    | 5       | 6.5   | 39.6    | 100   | 112     | 124  | 6  | 6    | 41.5      | 5    | 12   | 5                                  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 18                  | 21 | 12 | 8  | 6             | 7.5  | 5       | 6    | 44.4 | 38.0  | 38.0    | 38.0  | 6       | 13   | 43.5    | 6    | 13               | 31.0 | 5    | 6    | 5       | 6.5   | 39.9    | 101   | 113     | 125  | 6  | 6    | 41.5      | 5    | 12   | 5                                  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 19                  | 22 | 12 | 8  | 6             | 7.5  | 6       | 8.5  | 48.4 | 39.0  | 39.0    | 39.0  | 6       | 13   | 42.5    | 6    | 13               | 30.0 | 5    | 6    | 5       | 6.5   | 40.1    | 102   | 114     | 126  | 6  | 6    | 41.5      | 5    | 12   | 5                                  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 19                  | 22 | 13 | 8  | 6             | 7    | 5       | 6    | 45.0 | 39.0  | 39.0    | 39.0  | 6       | 13   | 42.5    | 6    | 13               | 30.5 | 6    | 8    | 5       | 6.5   | 40.3    | 102   | 114     | 126  | 7  | 7.5  | 44.5      | 5    | 12   | 5                                  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 20                  | 23 | 13 | 8  | 6             | 7    | 6       | 8.5  | 49.1 | 40.0  | 40.0    | 40.0  | 6       | 13   | 42.0    | 6    | 13               | 30.0 | 6    | 8    | 5       | 6     | 40.5    | 103   | 115     | 127  | 7  | 7.5  | 44.5      | 5    | 12   | 5                                  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 20                  | 24 | 13 | 8  | 6             | 6.5  | 6       | 8    | 49.3 | 40.0  | 40.0    | 40.0  | 6       | 12   | 42.0    | 6    | 12               | 30.0 | 6    | 8    | 5       | 6     | 40.6    | 104   | 116     | 128  | 7  | 7.5  | 44.5      | 5    | 12   | 5                                  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 21                  | 24 | 13 | 8  | 6             | 7    | 6       | 7.5  | 49.1 | 41.0  | 41.0    | 41.0  | 6       | 13   | 41.5    | 6    | 13               | 29.5 | 6    | 8    | 5       | 6     | 40.8    | 104   | 116     | 128  | 7  | 7.5  | 44.5      | 5    | 12   | 5                                  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 21                  | 25 | 14 | 8  | 6             | 6.5  | 6       | 8    | 49.9 | 41.0  | 41.0    | 41.0  | 6       | 13   | 41.5    | 6    | 13               | 29.5 | 6    | 8    | 5       | 6.5   | 41.1    | 105   | 117     | 129  | 7  | 7.5  | 44.5      | 5    | 12   | 5                                  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 8 FT |                     |    |    |    |               |      |         |      |      |        |         |      |      |      |         |      |      |      |         |    |                  |        |      |      |         |      |      | HEIGHT (HT) = 10 FT OR 11 FT |         |    |         |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|---------------------|----|----|----|---------------|------|---------|------|------|--------|---------|------|------|------|---------|------|------|------|---------|----|------------------|--------|------|------|---------|------|------|------------------------------|---------|----|---------|----|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL  | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |      |      |      |         |      |      |      |         |    | BOTTOM SLAB BARS |        |      |      |         |      |      |                              |         |    |         |    | WALL BARS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |      |      |      | H2 BARS |      |      |      | A2 BARS |    | J4 BARS          |        |      |      | H3 BARS |      |      |                              | B1 BARS |    | B2 BARS |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         | SIZE | SPA. | C5   | SIZE    | SPA. | C6   | SIZE | SPA.    | C4 | K3               |        | SIZE | SPA. | C7      | SIZE | SPA. | SIZE                         | SPA.    | G1 |         |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                     |    |    |    |               |      |         |      |      | HT=10' | HT=11'  |      |      |      |         |      |      |      |         |    | HT=10'           | HT=11' |      |      |         |      |      |                              |         |    |         |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 12                  | 9  | 8  | 9  | 5             | 7    | 5       | 7.5  | 41.9 | 32.0   | 32.0    | 4    | 12   | 81.5 | 4       | 12   | 27.5 | 5    | 9       | 6  | 6                | 73.9   | 125  | 137  | 5       | 6    | 41.5 | 5                            | 12      | 5  | 10.5    | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 13                  | 10 | 9  | 9  | 5             | 7    | 5       | 8    | 42.5 | 29.0   | 33.0    | 4    | 13   | 82.0 | 4       | 13   | 27.0 | 4    | 6       | 5  | 6                | 66.8   | 126  | 138  | 5       | 6.5  | 41.0 | 5                            | 12      | 5  | 11      | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 8                   | 11 | 9  | 9  | 4             | 6    | 6       | 7    | 44.5 | 24.0   | 28.0    | 5    | 16   | 84.0 | 5       | 16   | 27.0 | 4    | 7       | 5  | 6                | 66.0   | 127  | 139  | 5       | 7.5  | 41.0 | 5                            | 10.5    | 5  | 9.5     | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 8                   | 11 | 9  | 9  | 4             | 6    | 6       | 7    | 61.5 | 28.0   | 32.0    | 5    | 15   | 43.0 | 5       | 15   | 26.0 | 4    | 6.5     | 6  | 7                | 64.5   | 127  | 139  | 5       | 7    | 40.0 | 5                            | 11.5    | 5  | 9       | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 8                   | 11 | 9  | 9  | 4             | 6    | 6       | 7    | 55.6 | 28.0   | 32.0    | 5    | 14   | 40.5 | 5       | 14   | 25.5 | 4    | 6       | 6  | 6.5              | 60.4   | 127  | 139  | 5       | 6    | 39.5 | 5                            | 11.5    | 5  | 8.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 9                   | 11 | 9  | 9  | 5             | 8.5  | 6       | 7.5  | 54.9 | 29.0   | 33.0    | 5    | 14   | 39.5 | 5       | 14   | 25.5 | 5    | 8.5     | 6  | 6                | 57.5   | 127  | 139  | 5       | 6    | 39.0 | 5                            | 12      | 5  | 8.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 10                  | 11 | 9  | 9  | 5             | 8    | 5       | 6    | 51.1 | 30.0   | 30.0    | 5    | 14   | 39.0 | 5       | 14   | 25.5 | 5    | 7.5     | 6  | 6                | 55.3   | 127  | 139  | 6       | 7    | 41.5 | 5                            | 12      | 5  | 8.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 10                  | 12 | 9  | 9  | 5             | 8    | 6       | 6.5  | 52.0 | 30.0   | 34.0    | 5    | 13   | 38.5 | 5       | 13   | 25.5 | 5    | 7.5     | 6  | 6                | 54.8   | 128  | 140  | 6       | 7    | 41.5 | 5                            | 12      | 5  | 8.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 11                  | 13 | 10 | 9  | 5             | 7.5  | 5       | 6    | 48.6 | 31.0   | 31.0    | 5    | 13   | 38.0 | 5       | 13   | 25.5 | 5    | 7.5     | 6  | 6.5              | 54.1   | 129  | 141  | 6       | 7.5  | 41.5 | 5                            | 12      | 5  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 11                  | 13 | 10 | 9  | 5             | 7.5  | 5       | 6    | 45.1 | 31.0   | 31.0    | 5    | 12   | 37.0 | 5       | 12   | 25.0 | 5    | 7       | 6  | 6.5              | 50.4   | 129  | 141  | 6       | 7    | 41.5 | 5                            | 12      | 5  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 12                  | 14 | 10 | 9  | 5             | 7    | 6       | 7.5  | 48.4 | 32.0   | 36.0    | 5    | 13   | 37.0 | 5       | 13   | 25.0 | 5    | 7       | 6  | 6.5              | 50.5   | 130  | 142  | 6       | 7.5  | 41.5 | 5                            | 12      | 5  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 13                  | 15 | 10 | 9  | 5             | 7    | 6       | 7    | 48.5 | 33.0   | 37.0    | 5    | 12   | 37.0 | 5       | 12   | 24.5 | 5    | 7       | 6  | 6.5              | 50.6   | 131  | 143  | 6       | 7    | 41.5 | 5                            | 12      | 5  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 13                  | 16 | 11 | 9  | 5             | 6.5  | 6       | 8    | 48.5 | 33.0   | 33.0    | 5    | 12   | 36.5 | 5       | 12   | 25.0 | 5    | 7       | 5  | 6                | 47.8   | 132  | 144  | 6       | 7    | 41.5 | 5                            | 12      | 5  | 7.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 14                  | 16 | 12 | 9  | 5             | 6.5  | 5       | 6    | 46.0 | 34.0   | 34.0    | 5    | 12   | 36.0 | 5       | 12   | 24.5 | 5    | 6       | 5  | 6                | 47.5   | 132  | 144  | 6       | 7    | 41.5 | 5                            | 12      | 5  | 7       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 15                  | 17 | 12 | 9  | 5             | 6.5  | 6       | 8    | 55.3 | 35.0   | 35.0    | 6    | 16   | 44.5 | 6       | 16   | 32.5 | 5    | 6.5     | 5  | 6                | 47.8   | 133  | 145  | 6       | 6.5  | 41.5 | 5                            | 12      | 5  | 7       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 16                  | 18 | 13 | 9  | 5             | 6.5  | 6       | 8    | 55.8 | 36.0   | 36.0    | 6    | 15   | 44.0 | 6       | 15   | 31.5 | 5    | 6.5     | 5  | 6                | 48.0   | 134  | 146  | 6       | 6.5  | 41.5 | 5                            | 12      | 5  | 6.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 16                  | 19 | 13 | 9  | 5             | 6    | 6       | 7.5  | 55.8 | 36.0   | 36.0    | 6    | 15   | 44.0 | 6       | 15   | 32.0 | 5    | 6.5     | 5  | 6                | 48.3   | 135  | 147  | 6       | 6    | 41.5 | 5                            | 12      | 5  | 6.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 17                  | 20 | 13 | 9  | 5             | 6    | 6       | 7    | 56.0 | 37.0   | 37.0    | 6    | 14   | 43.5 | 6       | 14   | 31.0 | 5    | 6.5     | 5  | 6                | 48.5   | 136  | 148  | 6       | 6.5  | 41.5 | 5                            | 12      | 5  | 6.5     | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 17                  | 20 | 14 | 9  | 6             | 8    | 6       | 7.5  | 56.1 | 37.0   | 37.0    | 6    | 14   | 43.0 | 6       | 14   | 31.5 | 5    | 6       | 5  | 6                | 48.6   | 136  | 148  | 6       | 6    | 41.5 | 5                            | 12      | 5  | 6       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 18                  | 21 | 14 | 9  | 6             | 8    | 6       | 7    | 56.4 | 38.0   | 38.0    | 6    | 13   | 42.5 | 6       | 13   | 30.5 | 5    | 6       | 5  | 6                | 48.9   | 137  | 149  | 6       | 6    | 41.5 | 5                            | 12      | 5  | 6       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 18                  | 22 | 15 | 9  | 6             | 7    | 6       | 7.5  | 56.8 | 38.0   | 42.0    | 6    | 13   | 42.5 | 6       | 13   | 30.5 | 5    | 6       | 6  | 8                | 52.3   | 138  | 150  | 6       | 6    | 41.5 | 5                            | 12      | 6  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 19                  | 22 | 15 | 9  | 6             | 7.5  | 6       | 7    | 57.0 | 39.0   | 43.0    | 6    | 14   | 42.0 | 6       | 14   | 30.0 | 6    | 8.5     | 6  | 8                | 52.3   | 138  | 150  | 7       | 7.5  | 44.5 | 5                            | 12      | 6  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 19                  | 23 | 15 | 9  | 6             | 6.5  | 6       | 6.5  | 56.9 | 39.0   | 43.0    | 6    | 13   | 42.0 | 6       | 13   | 30.0 | 6    | 8.5     | 6  | 8                | 52.5   | 139  | 151  | 7       | 8    | 44.5 | 5                            | 12      | 6  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 20                  | 24 | 16 | 9  | 6             | 7    | 6       | 7    | 57.6 | 40.0   | 44.0    | 6    | 14   | 41.5 | 6       | 14   | 30.0 | 6    | 8       | 6  | 7.5              | 52.9   | 140  | 152  | 7       | 8    | 44.5 | 5                            | 12      | 6  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 20                  | 24 | 16 | 9  | 6             | 6.5  | 6       | 6.5  | 57.5 | 40.0   | 44.0    | 6    | 13   | 41.5 | 6       | 13   | 30.0 | 6    | 8       | 6  | 7.5              | 52.9   | 140  | 152  | 7       | 7.5  | 44.5 | 5                            | 12      | 6  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 21                  | 25 | 16 | 9  | 6             | 6.5  | 6       | 6    | 57.8 | 41.0   | 45.0    | 6    | 14   | 41.0 | 6       | 14   | 30.0 | 6    | 8       | 6  | 7.5              | 53.1   | 141  | 153  | 7       | 7.5  | 44.5 | 5                            | 12      | 6  | 8       | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**STATE OF MISSOURI**  
DENNIS W. HECKMAN  
NUMBER PE-27141  
PROFESSIONAL ENGINEER

**CONCRETE DOUBLE BOX CULVERT**  
MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS  
SPAN (S): 8 FEET  
HEIGHT (HT): 10 THRU 11 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

**703.47**

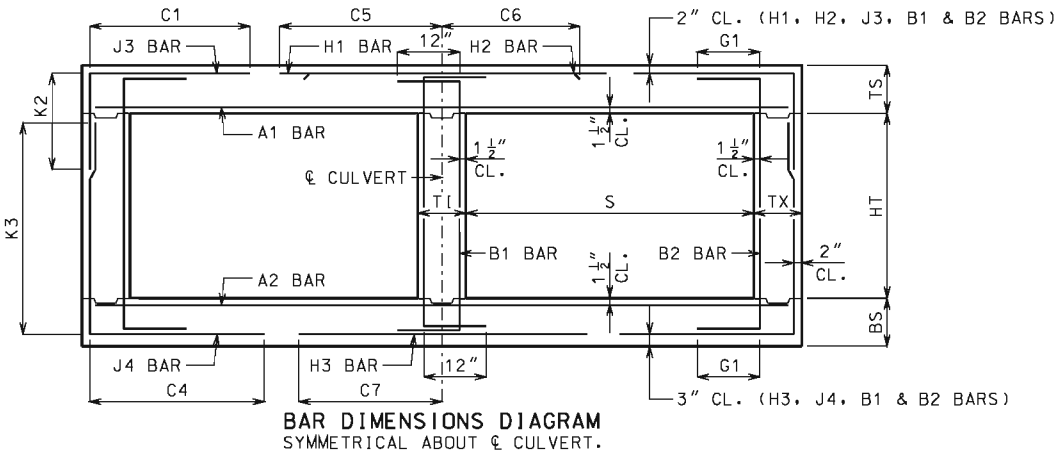
SHEET NO.  
11 OF 27

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 9 FT |                  |    |    |    |               |      |         |      |      |       |         |       |         |      |         |      |                  |      |      |      |         |      |         |       |         |       |      |      |           |      |      | HEIGHT (HT) = 5 FT OR 6 FT OR 7 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|-------|---------|-------|---------|------|---------|------|------------------|------|------|------|---------|------|---------|-------|---------|-------|------|------|-----------|------|------|------------------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |       |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |      |         |       |         |       |      |      | WALL BARS |      |      |                                    |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |       | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      | B1 BARS |       | B2 BARS |       |      |      |           |      |      |                                    |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         |       | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | SIZE    | SPA. | C4      | K3    |         |       | SIZE | SPA. | C7        | SIZE | SPA. | SIZE                               | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=5' | HT=6'   | HT=7' |         |      |         |      |                  |      |      |      |         |      |         | HT=5' | HT=6'   | HT=7' |      |      |           |      |      |                                    |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 13               | 9  | 8  | 8  | 5             | 6.5  | 4       | 7.5  | 45.3 | 29.0  | 29.0    | 29.0  | 5       | 17   | 89.5    | 5    | 17               | 28.5 | 4    | 6    | 4       | 6    | 47.3    | 65    | 77      | 89    | 5    | 6    | 44.0      | 5    | 12   | 5                                  | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 13               | 10 | 8  | 8  | 5             | 6.5  | 4       | 7.5  | 45.3 | 29.0  | 29.0    | 29.0  | 5       | 16   | 89.5    | 5    | 16               | 27.5 | 4    | 6    | 4       | 7.5  | 44.5    | 66    | 78      | 90    | 5    | 6.5  | 44.0      | 5    | 12   | 5                                  | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 9                | 9  | 8  | 8  | 5             | 8.5  | 5       | 6.5  | 42.1 | 25.0  | 25.0    | 25.0  | 5       | 15   | 59.0    | 5    | 15               | 28.5 | 5    | 8    | 4       | 6    | 39.5    | 65    | 77      | 89    | 6    | 6.5  | 46.0      | 5    | 11   | 5                                  | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 9                | 9  | 8  | 8  | 5             | 8.5  | 5       | 6.5  | 36.9 | 25.0  | 25.0    | 29.0  | 5       | 14   | 47.0    | 5    | 14               | 27.5 | 5    | 7.5  | 5       | 7    | 36.5    | 65    | 77      | 89    | 6    | 6    | 45.0      | 5    | 12   | 5                                  | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 9                | 10 | 8  | 8  | 5             | 8.5  | 5       | 6.5  | 35.6 | 25.0  | 25.0    | 25.0  | 5       | 12   | 44.0    | 5    | 12               | 27.0 | 5    | 7.5  | 4       | 6.5  | 34.6    | 66    | 78      | 90    | 6    | 6.5  | 45.0      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 10               | 11 | 8  | 8  | 5             | 8    | 5       | 7.5  | 34.3 | 26.0  | 26.0    | 26.0  | 5       | 12   | 43.0    | 5    | 12               | 26.5 | 5    | 7.5  | 4       | 6.5  | 33.3    | 67    | 79      | 91    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 11               | 12 | 8  | 8  | 5             | 7.5  | 5       | 8.5  | 33.0 | 27.0  | 27.0    | 27.0  | 5       | 12   | 42.5    | 5    | 12               | 26.5 | 5    | 7    | 4       | 6    | 32.1    | 68    | 80      | 92    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 12               | 13 | 8  | 8  | 5             | 7    | 5       | 8.5  | 32.1 | 28.0  | 28.0    | 28.0  | 5       | 12   | 42.0    | 5    | 12               | 26.5 | 5    | 6.5  | 4       | 6    | 31.5    | 69    | 81      | 93    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 13               | 14 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 31.5 | 29.0  | 29.0    | 33.0  | 6       | 16   | 44.5    | 6    | 16               | 29.5 | 5    | 6.5  | 5       | 8.5  | 31.0    | 70    | 82      | 94    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 13               | 15 | 8  | 8  | 5             | 6.5  | 5       | 8    | 31.3 | 29.0  | 29.0    | 33.0  | 6       | 15   | 44.5    | 6    | 15               | 29.5 | 5    | 6.5  | 5       | 8.5  | 30.5    | 71    | 83      | 95    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 14               | 15 | 8  | 8  | 5             | 6    | 5       | 8.5  | 29.3 | 30.0  | 30.0    | 34.0  | 6       | 16   | 43.5    | 6    | 16               | 29.0 | 5    | 6    | 5       | 8.5  | 29.1    | 71    | 83      | 95    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 15               | 16 | 8  | 8  | 5             | 6    | 5       | 8    | 34.1 | 31.0  | 31.0    | 35.0  | 6       | 15   | 49.5    | 6    | 15               | 35.0 | 5    | 6    | 5       | 8    | 29.1    | 72    | 84      | 96    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 15               | 17 | 8  | 8  | 6             | 7.5  | 5       | 8    | 34.3 | 31.0  | 31.0    | 35.0  | 6       | 14   | 49.5    | 6    | 14               | 35.0 | 5    | 6    | 5       | 7    | 28.9    | 73    | 85      | 97    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 16               | 18 | 8  | 8  | 6             | 8    | 5       | 7    | 34.1 | 32.0  | 36.0    | 36.0  | 6       | 14   | 49.0    | 6    | 14               | 35.0 | 5    | 6    | 5       | 6.5  | 29.0    | 74    | 86      | 98    | 6    | 6.5  | 44.5      | 5    | 12   | 5                                  | 11   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 17               | 19 | 8  | 8  | 6             | 7.5  | 5       | 6.5  | 34.0 | 37.0  | 37.0    | 37.0  | 6       | 14   | 49.0    | 6    | 14               | 35.0 | 5    | 6    | 5       | 6.5  | 29.1    | 75    | 87      | 99    | 6    | 6    | 44.5      | 5    | 12   | 5                                  | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 18               | 20 | 8  | 8  | 6             | 7.5  | 5       | 6.5  | 34.0 | 38.0  | 38.0    | 38.0  | 6       | 13   | 48.5    | 6    | 13               | 34.0 | 6    | 8.5  | 5       | 6    | 29.3    | 76    | 88      | 100   | 6    | 6    | 44.5      | 5    | 12   | 5                                  | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 19               | 21 | 8  | 8  | 6             | 7.5  | 5       | 6    | 34.1 | 39.0  | 39.0    | 39.0  | 6       | 13   | 48.0    | 6    | 13               | 33.0 | 6    | 8.5  | 6       | 7.5  | 32.5    | 77    | 89      | 101   | 7    | 7.5  | 47.0      | 5    | 12   | 5                                  | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 20               | 21 | 8  | 8  | 6             | 7.5  | 6       | 7.5  | 38.0 | 44.0  | 44.0    | 44.0  | 6       | 12   | 47.5    | 6    | 12               | 32.5 | 6    | 7.5  | 6       | 7.5  | 32.6    | 77    | 89      | 101   | 7    | 7.5  | 47.0      | 5    | 12   | 5                                  | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 20               | 22 | 8  | 8  | 6             | 7    | 6       | 7.5  | 38.0 | 44.0  | 44.0    | 44.0  | 6       | 12   | 47.5    | 6    | 12               | 33.0 | 6    | 8    | 6       | 7    | 32.6    | 78    | 90      | 102   | 7    | 7.5  | 47.0      | 5    | 12   | 5                                  | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 21               | 23 | 8  | 8  | 6             | 7    | 6       | 7    | 38.1 | 45.0  | 45.0    | 45.0  | 6       | 12   | 47.0    | 6    | 12               | 32.0 | 6    | 7.5  | 6       | 6.5  | 32.8    | 79    | 91      | 103   | 7    | 7    | 47.0      | 5    | 12   | 5                                  | 9    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 22               | 24 | 8  | 8  | 6             | 6.5  | 6       | 6.5  | 38.3 | 46.0  | 46.0    | 46.0  | 7       | 15   | 51.5    | 7    | 15               | 36.0 | 6    | 7.5  | 6       | 6    | 33.0    | 80    | 92      | 104   | 7    | 7    | 47.0      | 5    | 12   | 5                                  | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 22               | 24 | 8  | 8  | 6             | 6.5  | 6       | 6    | 38.1 | 46.0  | 46.0    | 46.0  | 7       | 15   | 51.5    | 7    | 15               | 36.5 | 6    | 7.5  | 6       | 6    | 33.0    | 80    | 92      | 104   | 7    | 7    | 47.0      | 5    | 12   | 5                                  | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 23               | 25 | 9  | 8  | 6             | 6.5  | 6       | 7    | 39.0 | 47.0  | 47.0    | 47.0  | 7       | 15   | 50.5    | 7    | 15               | 36.0 | 6    | 7.5  | 6       | 7    | 33.5    | 81    | 93      | 105   | 7    | 7    | 47.0      | 5    | 12   | 5                                  | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 24               | 26 | 9  | 8  | 6             | 6    | 6       | 7    | 39.0 | 48.0  | 48.0    | 48.0  | 7       | 15   | 49.5    | 7    | 15               | 35.5 | 6    | 7.5  | 6       | 6.5  | 33.8    | 82    | 94      | 106   | 7    | 7    | 47.0      | 5    | 12   | 5                                  | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 24               | 26 | 9  | 8  | 6             | 6    | 6       | 7    | 39.0 | 48.0  | 48.0    | 48.0  | 7       | 15   | 49.5    | 7    | 15               | 35.5 | 6    | 6.5  | 6       | 6.5  | 33.8    | 82    | 94      | 106   | 7    | 6.5  | 47.0      | 5    | 12   | 5                                  | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 25               | 27 | 9  | 8  | 6             | 6    | 6       | 6.5  | 39.0 | 49.0  | 49.0    | 49.0  | 7       | 15   | 49.0    | 7    | 15               | 35.5 | 6    | 7    | 6       | 6.5  | 34.0    | 83    | 95      | 107   | 7    | 6.5  | 47.0      | 5    | 12   | 5                                  | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 9 FT |                  |    |    |    |               |      |         |      |      |         |       |        |         |      |      |         |                  |         |      |      |         |      |      |         |       |         |      |      |           | HEIGHT (HT) = 8 FT OR 9 FT OR 10 FT |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|---------|-------|--------|---------|------|------|---------|------------------|---------|------|------|---------|------|------|---------|-------|---------|------|------|-----------|-------------------------------------|------|------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |         |       |        |         |      |      |         | BOTTOM SLAB BARS |         |      |      |         |      |      |         |       |         |      |      | WALL BARS |                                     |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      | H1 BARS |       |        | H2 BARS |      |      | A2 BARS |                  | J4 BARS |      |      | H3 BARS |      |      | B1 BARS |       | B2 BARS |      |      |           |                                     |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2      |       |        | SIZE    | SPA. | C5   | SIZE    | SPA.             | C6      | SIZE | SPA. | SIZE    | SPA. | C4   | K3      |       |         | SIZE | SPA. | C7        | SIZE                                | SPA. | SIZE | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=8'   | HT=9' | HT=10' |         |      |      |         |                  |         |      |      |         |      |      | HT=8'   | HT=9' | HT=10'  |      |      |           |                                     |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT            | 13               | 10 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 47.3 | 29.0    | 29.0  | 33.0   | 5       | 18   | 91.5 | 5       | 18               | 29.0    | 4    | 6    | 5       | 6    | 69.0 | 102     | 114   | 126     | 5    | 6.5  | 44.5      | 5                                   | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT            | 13               | 10 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 47.3 | 29.0    | 29.0  | 33.0   | 5       | 17   | 91.5 | 5       | 17               | 28.0    | 5    | 9    | 6       | 7    | 66.6 | 102     | 114   | 126     | 5    | 6    | 44.0      | 5                                   | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT            | 9                | 9  | 8  | 8  | 5             | 8.5  | 6       | 7    | 47.3 | 29.0    | 33.0  | 33.0   | 5       | 15   | 91.5 | 5       | 15               | 29.0    | 5    | 7.5  | 6       | 6    | 59.4 | 101     | 113   | 125     | 6    | 6    | 46.0      | 5                                   | 12   | 5    | 10.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT            | 9                | 10 | 9  | 8  | 5             | 8.5  | 5       | 6    | 54.1 | 25.0    | 25.0  | 29.0   | 5       | 14   | 48.0 | 5       | 14               | 27.5    | 5    | 8    | 5       | 6    | 51.8 | 102     | 114   | 126     | 6    | 6.5  | 45.5      | 5                                   | 12   | 5    | 11.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT            | 9                | 11 | 9  | 8  | 5             | 8.5  | 5       | 6    | 48.0 | 25.0    | 29.0  | 29.0   | 5       | 13   | 44.0 | 5       | 13               | 27.0    | 5    | 8    | 5       | 6    | 49.3 | 103     | 115   | 127     | 6    | 7    | 45.0      | 5                                   | 12   | 5    | 11   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT           | 10               | 11 | 9  | 8  | 5             | 8    | 5       | 6    | 46.6 | 26.0    | 30.0  | 30.0   | 5       | 12   | 43.0 | 5       | 12               | 26.5    | 5    | 7    | 6       | 7    | 50.0 | 103     | 115   | 127     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 10   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT           | 11               | 12 | 9  | 8  | 5             | 7.5  | 6       | 7    | 48.4 | 31.0    | 31.0  | 35.0   | 5       | 12   | 42.0 | 5       | 12               | 26.5    | 5    | 7    | 6       | 7    | 49.0 | 104     | 116   | 128     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT           | 12               | 13 | 9  | 8  | 5             | 7    | 6       | 7.5  | 47.4 | 32.0    | 32.0  | 36.0   | 5       | 12   | 41.5 | 5       | 12               | 26.5    | 5    | 6.5  | 6       | 7    | 48.1 | 105     | 117   | 129     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT           | 12               | 14 | 9  | 8  | 5             | 7    | 6       | 6.5  | 46.4 | 32.0    | 32.0  | 36.0   | 6       | 15   | 44.5 | 6       | 15               | 29.5    | 5    | 6.5  | 6       | 7    | 47.5 | 106     | 118   | 130     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT           | 13               | 15 | 9  | 8  | 5             | 6.5  | 6       | 6.5  | 46.0 | 33.0    | 33.0  | 37.0   | 6       | 15   | 44.0 | 6       | 15               | 29.0    | 5    | 6.5  | 6       | 7.5  | 47.3 | 107     | 119   | 131     | 6    | 7    | 44.5      | 5                                   | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT           | 14               | 15 | 9  | 8  | 5             | 6.5  | 5       | 6    | 40.1 | 34.0    | 34.0  | 34.0   | 6       | 16   | 43.0 | 6       | 16               | 29.0    | 5    | 6    | 6       | 7.5  | 44.4 | 107     | 119   | 131     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT           | 14               | 16 | 10 | 8  | 5             | 6    | 5       | 6    | 40.5 | 34.0    | 34.0  | 34.0   | 6       | 15   | 43.0 | 6       | 15               | 29.0    | 5    | 6    | 5       | 7    | 41.5 | 108     | 120   | 132     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT           | 15               | 17 | 10 | 8  | 6             | 8    | 6       | 8    | 49.5 | 35.0    | 35.0  | 35.0   | 6       | 15   | 48.5 | 6       | 15               | 35.0    | 5    | 6    | 5       | 6.5  | 41.6 | 109     | 121   | 133     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT           | 16               | 18 | 11 | 8  | 6             | 8    | 5       | 6    | 46.1 | 36.0    | 36.0  | 36.0   | 6       | 15   | 48.0 | 6       | 15               | 34.5    | 5    | 6    | 5       | 7    | 41.9 | 110     | 122   | 134     | 6    | 6.5  | 44.5      | 5                                   | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT           | 17               | 19 | 11 | 8  | 6             | 8    | 6       | 8    | 50.1 | 37.0    | 37.0  | 37.0   | 6       | 14   | 47.5 | 6       | 14               | 33.5    | 5    | 6    | 5       | 7    | 42.0 | 111     | 123   | 135     | 6    | 6    | 44.5      | 5                                   | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT           | 18               | 20 | 12 | 8  | 6             | 8    | 5       | 6    | 46.8 | 38.0    | 38.0  | 38.0   | 6       | 13   | 47.0 | 6       | 13               | 32.5    | 6    | 8.5  | 5       | 6.5  | 42.4 | 112     | 124   | 136     | 6    | 6    | 44.5      | 5                                   | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT           | 18               | 21 | 12 | 8  | 6             | 7.5  | 6       | 8    | 50.8 | 38.0    | 38.0  | 38.0   | 6       | 13   | 47.0 | 6       | 13               | 33.5    | 6    | 8    | 5       | 6.5  | 42.5 | 113     | 125   | 137     | 7    | 7.5  | 47.5      | 5                                   | 12   | 5    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT           | 19               | 22 | 12 | 8  | 6             | 7    | 6       | 7.5  | 50.9 | 39.0    | 39.0  | 39.0   | 6       | 13   | 46.0 | 6       | 13               | 32.5    | 6    | 8    | 5       | 6.5  | 42.8 | 114     | 126   | 138     | 7    | 7.5  | 47.5      | 5                                   | 12   | 5    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT           | 20               | 23 | 13 | 8  | 6             | 7    | 6       | 8    | 51.5 | 40.0    | 40.0  | 40.0   | 6       | 12   | 45.0 | 6       | 12               | 31.5    | 6    | 8    | 5       | 6    | 43.1 | 115     | 127   | 139     | 7    | 7    | 47.5      | 5                                   | 12   | 5    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT           | 20               | 23 | 13 | 8  | 6             | 6.5  | 6       | 7.5  | 51.4 | 40.0    | 40.0  | 40.0   | 6       | 12   | 45.0 | 6       | 12               | 32.0    | 6    | 7.5  | 5       | 6    | 43.0 | 115     | 127   | 139     | 7    | 7    | 47.5      | 5                                   | 12   | 5    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT           | 21               | 24 | 13 | 8  | 6             | 6.5  | 6       | 7    | 51.5 | 41.0    | 41.0  | 41.0   | 6       | 12   | 44.5 | 6       | 12               | 31.0    | 6    | 7.5  | 5       | 6    | 43.3 | 116     | 128   | 140     | 7    | 7    | 47.5      | 5                                   | 12   | 5    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT           | 21               | 25 | 14 | 8  | 6             | 6    | 6       | 7.5  | 52.3 | 41.0    | 41.0  | 41.0   | 6       | 12   | 44.5 | 6       | 12               | 31.5    | 6    | 7.5  | 5       | 6    | 43.5 | 117     | 129   | 141     | 7    | 7    | 47.5      | 5                                   | 12   | 5    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT           | 22               | 25 | 14 | 8  | 6             | 6.5  | 6       | 7    | 52.1 | 42.0    | 42.0  | 42.0   | 7       | 16   | 49.0 | 7       | 16               | 35.5    | 6    | 6.5  | 5       | 6    | 43.6 | 117     | 129   | 141     | 7    | 6.5  | 47.5      | 5                                   | 12   | 5    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT           | 23               | 26 | 14 | 8  | 6             | 6    | 6       | 7    | 52.1 | 43.0    | 43.0  | 43.0   | 6       | 12   | 43.5 | 6       | 12               | 30.5    | 6    | 7    | 5       | 6    | 43.9 | 118     | 130   | 142     | 7    | 6.5  | 47.5      | 5                                   | 12   | 5    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT           | 23               | 27 | 15 | 8  | 6             | 6    | 6       | 7    | 53.0 | 43.0    | 43.0  | 47.0   | 6       | 12   | 43.5 | 6       | 12               | 30.0    | 6    | 7    | 6       | 8.5  | 47.1 | 119     | 131   | 143     | 7    | 6.5  | 47.5      | 5                                   | 12   | 5    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT           | 24               | 28 | 15 | 8  | 6             | 6    | 6       | 7    | 53.0 | 44.0    | 44.0  | 48.0   | 6       | 12   | 43.0 | 6       | 12               | 30.0    | 6    | 7    | 6       | 8    | 47.5 | 120     | 132   | 144     | 7    | 6.5  | 47.5      | 5                                   | 12   | 6    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 9 FT |                  |    |    |    |               |      |         |      |      |        |         |      |      |      |         |      |                  |      |         |    |         |        |      |      |         |      |      | HEIGHT (HT) = 11 FT OR 12 FT |           |    |         |    |  |  |  |  |  |  |  |
|-----------------|------------------|----|----|----|---------------|------|---------|------|------|--------|---------|------|------|------|---------|------|------------------|------|---------|----|---------|--------|------|------|---------|------|------|------------------------------|-----------|----|---------|----|--|--|--|--|--|--|--|
| DESIGN FILL     | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |      |      |      |         |      | BOTTOM SLAB BARS |      |         |    |         |        |      |      |         |      |      |                              | WALL BARS |    |         |    |  |  |  |  |  |  |  |
|                 |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |      |      |      | H2 BARS |      |                  |      | A2 BARS |    | J4 BARS |        |      |      | H3 BARS |      |      |                              | B1 BARS   |    | B2 BARS |    |  |  |  |  |  |  |  |
|                 | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         | SIZE | SPA. | C5   | SIZE    | SPA. | C6               | SIZE | SPA.    | C4 | K3      |        | SIZE | SPA. | C7      | SIZE | SPA. | SIZE                         | SPA.      | G1 |         |    |  |  |  |  |  |  |  |
|                 |                  |    |    |    |               |      |         |      |      | HT=11' | HT=12'  |      |      |      |         |      |                  |      |         |    | HT=11'  | HT=12' |      |      |         |      |      |                              |           |    |         |    |  |  |  |  |  |  |  |
| 1 FT            | 13               | 10 | 9  | 10 | 5             | 6.5  | 5       | 8    | 48.3 | 33.0   | 33.0    | 5    | 17   | 93.0 | 5       | 17   | 29.0             | 5    | 9       | 6  | 6.5     | 79.4   | 138  | 150  | 5       | 6    | 44.5 | 5                            | 12        | 5  | 9.5     | 12 |  |  |  |  |  |  |  |
| 2 FT            | 13               | 11 | 9  | 10 | 5             | 6.5  | 5       | 7.5  | 48.3 | 33.0   | 33.0    | 5    | 16   | 93.0 | 5       | 16   | 28.0             | 4    | 6       | 6  | 7       | 77.0   | 139  | 151  | 5       | 6    | 44.5 | 5                            | 12        | 5  | 9       | 12 |  |  |  |  |  |  |  |
| 4 FT            | 9                | 10 | 9  | 10 | 5             | 8.5  | 5       | 6    | 48.3 | 29.0   | 29.0    | 5    | 15   | 93.0 | 5       | 15   | 29.0             | 5    | 8       | 6  | 6       | 71.4   | 138  | 150  | 6       | 7    | 46.5 | 5                            | 12        | 5  | 8.5     | 12 |  |  |  |  |  |  |  |
| 6 FT            | 9                | 11 | 9  | 10 | 5             | 8.5  | 6       | 7    | 69.3 | 29.0   | 33.0    | 5    | 15   | 47.0 | 5       | 15   | 28.0             | 5    | 8.5     | 6  | 6       | 68.0   | 139  | 151  | 5       | 6    | 43.0 | 5                            | 12        | 5  | 8.5     | 12 |  |  |  |  |  |  |  |
| 8 FT            | 9                | 11 | 9  | 10 | 5             | 8.5  | 6       | 6.5  | 61.6 | 29.0   | 33.0    | 5    | 13   | 44.0 | 5       | 13   | 27.5             | 5    | 7.5     | 6  | 6       | 63.8   | 139  | 151  | 6       | 7    | 45.5 | 5                            | 12        | 5  | 8.5     | 0  |  |  |  |  |  |  |  |
| 10 FT           | 10               | 11 | 10 | 10 | 5             | 8    | 5       | 6    | 56.4 | 30.0   | 30.0    | 5    | 13   | 43.0 | 5       | 13   | 27.5             | 5    | 7       | 6  | 6       | 60.1   | 139  | 151  | 6       | 6.5  | 45.0 | 5                            | 12        | 5  | 8       | 0  |  |  |  |  |  |  |  |
| 12 FT           | 11               | 12 | 10 | 10 | 5             | 7.5  | 5       | 6    | 55.0 | 31.0   | 31.0    | 5    | 13   | 42.5 | 5       | 13   | 27.0             | 5    | 6.5     | 6  | 6.5     | 59.1   | 140  | 152  | 6       | 6.5  | 45.0 | 5                            | 12        | 5  | 8       | 0  |  |  |  |  |  |  |  |
| 14 FT           | 11               | 13 | 10 | 10 | 5             | 7.5  | 6       | 7    | 55.6 | 31.0   | 35.0    | 6    | 16   | 45.0 | 6       | 16   | 30.0             | 5    | 6.5     | 6  | 6.5     | 58.5   | 141  | 153  | 6       | 6.5  | 45.0 | 5                            | 12        | 5  | 8       | 0  |  |  |  |  |  |  |  |
| 16 FT           | 12               | 14 | 11 | 10 | 5             | 7    | 6       | 8.5  | 54.6 | 32.0   | 36.0    | 6    | 16   | 44.5 | 6       | 16   | 30.0             | 5    | 6.5     | 6  | 7       | 57.4   | 142  | 154  | 6       | 6.5  | 45.0 | 5                            | 12        | 5  | 7.5     | 0  |  |  |  |  |  |  |  |
| 18 FT           | 13               | 15 | 11 | 10 | 5             | 6.5  | 6       | 7.5  | 54.6 | 33.0   | 37.0    | 6    | 16   | 44.0 | 6       | 16   | 30.0             | 5    | 6.5     | 6  | 6.5     | 57.1   | 143  | 155  | 6       | 7    | 44.5 | 5                            | 12        | 5  | 7.5     | 0  |  |  |  |  |  |  |  |
| 20 FT           | 13               | 15 | 11 | 10 | 5             | 6.5  | 6       | 7.5  | 51.5 | 33.0   | 37.0    | 6    | 15   | 43.5 | 6       | 15   | 29.5             | 5    | 6       | 6  | 6.5     | 53.4   | 143  | 155  | 6       | 6.5  | 44.5 | 5                            | 12        | 5  | 7.5     | 0  |  |  |  |  |  |  |  |
| 22 FT           | 14               | 16 | 12 | 10 | 5             | 6    | 6       | 8    | 51.9 | 34.0   | 38.0    | 6    | 16   | 43.0 | 6       | 16   | 29.5             | 5    | 6       | 6  | 7.5     | 53.6   | 144  | 156  | 6       | 6.5  | 44.5 | 5                            | 12        | 5  | 7       | 0  |  |  |  |  |  |  |  |
| 24 FT           | 15               | 17 | 12 | 10 | 5             | 6    | 6       | 7.5  | 58.0 | 35.0   | 39.0    | 6    | 16   | 48.5 | 6       | 16   | 35.5             | 5    | 6       | 6  | 7.5     | 53.8   | 145  | 157  | 6       | 6.5  | 44.5 | 5                            | 12        | 5  | 7       | 0  |  |  |  |  |  |  |  |
| 26 FT           | 16               | 18 | 13 | 10 | 6             | 8.5  | 6       | 7.5  | 58.5 | 36.0   | 40.0    | 6    | 15   | 48.0 | 6       | 15   | 34.5             | 5    | 6       | 6  | 8       | 54.0   | 146  | 158  | 6       | 6.5  | 44.5 | 5                            | 12        | 5  | 6.5     | 0  |  |  |  |  |  |  |  |
| 28 FT           | 17               | 19 | 13 | 10 | 6             | 8    | 6       | 7    | 58.6 | 37.0   | 41.0    | 6    | 14   | 47.5 | 6       | 14   | 33.5             | 6    | 8.5     | 6  | 8       | 54.1   | 147  | 159  | 6       | 6    | 44.5 | 5                            | 12        | 5  | 6.5     | 0  |  |  |  |  |  |  |  |
| 30 FT           | 17               | 20 | 13 | 10 | 6             | 7.5  | 6       | 6.5  | 58.5 | 37.0   | 41.0    | 6    | 14   | 47.5 | 6       | 14   | 34.5             | 6    | 8       | 6  | 7       | 54.4   | 148  | 160  | 6       | 6    | 44.5 | 5                            | 12        | 5  | 6.5     | 0  |  |  |  |  |  |  |  |
| 32 FT           | 18               | 21 | 14 | 10 | 6             | 7.5  | 6       | 7    | 59.1 | 38.0   | 42.0    | 6    | 13   | 47.0 | 6       | 13   | 33.5             | 6    | 8       | 6  | 8       | 54.6   | 149  | 161  | 7       | 7.5  | 47.5 | 5                            | 12        | 5  | 6       | 0  |  |  |  |  |  |  |  |
| 34 FT           | 19               | 22 | 14 | 10 | 6             | 7.5  | 6       | 6.5  | 59.3 | 39.0   | 43.0    | 6    | 13   | 46.5 | 6       | 13   | 32.5             | 6    | 8       | 6  | 8       | 54.9   | 150  | 162  | 7       | 7.5  | 47.5 | 5                            | 12        | 5  | 6       | 0  |  |  |  |  |  |  |  |
| 36 FT           | 19               | 22 | 15 | 10 | 6             | 7    | 6       | 6.5  | 59.5 | 43.0   | 43.0    | 6    | 13   | 46.0 | 6       | 13   | 33.0             | 6    | 7       | 6  | 8       | 54.9   | 150  | 162  | 7       | 7.5  | 48.0 | 5                            | 12        | 6  | 8       | 0  |  |  |  |  |  |  |  |
| 38 FT           | 20               | 23 | 15 | 10 | 6             | 7    | 6       | 6.5  | 59.6 | 44.0   | 44.0    | 6    | 12   | 45.5 | 6       | 12   | 32.0             | 6    | 7.5     | 6  | 8       | 55.1   | 151  | 163  | 7       | 7    | 47.5 | 5                            | 12        | 6  | 8       | 0  |  |  |  |  |  |  |  |
| 40 FT           | 20               | 24 | 16 | 10 | 6             | 6    | 6       | 6.5  | 60.0 | 44.0   | 44.0    | 6    | 12   | 45.0 | 6       | 12   | 32.5             | 6    | 7.5     | 6  | 7.5     | 55.5   | 152  | 164  | 7       | 7    | 48.0 | 5                            | 12        | 6  | 8       | 0  |  |  |  |  |  |  |  |
| 42 FT           | 21               | 25 | 16 | 10 | 6             | 6.5  | 6       | 6    | 60.3 | 45.0   | 45.0    | 6    | 12   | 44.5 | 6       | 12   | 31.5             | 6    | 7.5     | 6  | 7.5     | 55.8   | 153  | 165  | 7       | 7    | 48.0 | 5                            | 12        | 6  | 8       | 0  |  |  |  |  |  |  |  |
| 44 FT           | 22               | 25 | 17 | 10 | 6             | 6.5  | 6       | 6.5  | 60.8 | 46.0   | 46.0    | 6    | 12   | 44.0 | 6       | 12   | 31.0             | 6    | 6.5     | 6  | 7       | 55.9   | 153  | 165  | 7       | 6.5  | 48.0 | 5                            | 12        | 6  | 7.5     | 0  |  |  |  |  |  |  |  |
| 46 FT           | 22               | 26 | 17 | 10 | 6             | 6    | 6       | 6    | 60.8 | 46.0   | 46.0    | 6    | 12   | 44.0 | 6       | 12   | 31.0             | 6    | 7       | 6  | 7       | 56.1   | 154  | 166  | 7       | 6.5  | 48.0 | 5                            | 12        | 6  | 7.5     | 0  |  |  |  |  |  |  |  |
| 48 FT           | 23               | 27 | 18 | 10 | 6             | 6    | 6       | 6.5  | 61.5 | 47.0   | 47.0    | 6    | 12   | 43.5 | 6       | 12   | 31.0             | 6    | 7       | 6  | 6.5     | 56.6   | 155  | 167  | 7       | 6.5  | 48.0 | 5                            | 12        | 6  | 7       | 0  |  |  |  |  |  |  |  |
| 50 FT           | 23               | 28 | 19 | 10 | 6             | 6    | 6       | 6.5  | 62.0 | 43.0   | 47.0    | 6    | 12   | 43.5 | 6       | 12   | 31.0             | 6    | 7       | 6  | 7       | 57.0   | 156  | 168  | 7       | 6.5  | 48.0 | 5                            | 12        | 6  | 7       | 0  |  |  |  |  |  |  |  |



**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**CONCRETE  
DOUBLE BOX CULVERT**  
MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS  
SPAN (S): 9 FEET  
HEIGHT (HT): 11 THRU 12 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

**703.47**

SHEET NO.  
13 OF 27

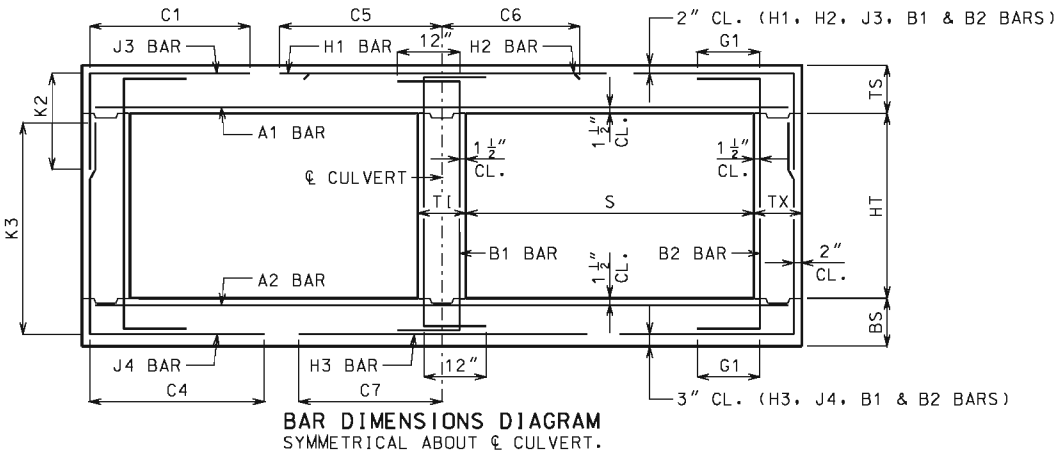
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 10 FT |                     |    |    |    |               |      |         |      |      |       |         |       |         |      |         |      |                  |      |      |      |         |      |         |       |         |       |      | HEIGHT (HT) = 5 FT OR 6 FT OR 7 FT |           |      |      |      |      |    |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|-------|---------|------|---------|------|------------------|------|------|------|---------|------|---------|-------|---------|-------|------|------------------------------------|-----------|------|------|------|------|----|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |       |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |      |         |       |         |       |      |                                    | WALL BARS |      |      |      |      |    |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |       | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      | B1 BARS |       | B2 BARS |       |      |                                    |           |      |      |      |      |    |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         |       | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | SIZE    | SPA. | C4      | K3    |         |       | SIZE | SPA.                               | C7        | SIZE | SPA. | SIZE | SPA. | G1 |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=5' | HT=6'   | HT=7' |         |      |         |      |                  |      |      |      |         |      |         | HT=5' | HT=6'   | HT=7' |      |                                    |           |      |      |      |      |    |  |  |  |  |  |  |  |  |
| 1 FT             | 13                  | 10 | 8  | 8  | 5             | 6.5  | 4       | 7    | 48.9 | 29.0  | 29.0    | 29.0  | 5       | 15   | 98.0    | 5    | 15               | 29.0 | 4    | 6    | 4       | 7    | 48.1    | 66    | 78      | 90    | 5    | 6                                  | 47.5      | 5    | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |
| 2 FT             | 13                  | 10 | 8  | 8  | 5             | 6.5  | 4       | 7    | 48.9 | 29.0  | 29.0    | 29.0  | 5       | 13   | 98.0    | 5    | 13               | 28.5 | 5    | 8.5  | 4       | 6.5  | 43.8    | 66    | 78      | 90    | 6    | 7                                  | 50.0      | 5    | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |
| 4 FT             | 9                   | 10 | 8  | 8  | 5             | 7.5  | 6       | 7.5  | 43.1 | 25.0  | 25.0    | 25.0  | 5       | 12   | 62.0    | 5    | 12               | 30.0 | 5    | 8    | 4       | 7    | 38.9    | 66    | 78      | 90    | 6    | 6.5                                | 49.5      | 5    | 8.5  | 5    | 12   | 12 |  |  |  |  |  |  |  |  |
| 6 FT             | 9                   | 10 | 8  | 8  | 5             | 8.5  | 5       | 6    | 38.0 | 25.0  | 25.0    | 25.0  | 6       | 15   | 53.5    | 6    | 15               | 32.0 | 5    | 7    | 4       | 6.5  | 36.1    | 66    | 78      | 90    | 6    | 6                                  | 48.5      | 5    | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |
| 8 FT             | 10                  | 11 | 8  | 8  | 5             | 8    | 5       | 7.5  | 36.0 | 26.0  | 26.0    | 26.0  | 6       | 16   | 51.0    | 6    | 16               | 31.5 | 5    | 7    | 4       | 6.5  | 34.1    | 67    | 79      | 91    | 6    | 6                                  | 48.0      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 10 FT            | 11                  | 12 | 8  | 8  | 5             | 7.5  | 5       | 8    | 34.1 | 27.0  | 27.0    | 27.0  | 6       | 15   | 49.5    | 6    | 15               | 31.0 | 5    | 6.5  | 4       | 6    | 32.6    | 68    | 80      | 92    | 6    | 6.5                                | 48.0      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 12 FT            | 12                  | 13 | 8  | 8  | 5             | 7    | 5       | 8.5  | 32.8 | 28.0  | 28.0    | 28.0  | 6       | 15   | 48.5    | 6    | 15               | 31.0 | 5    | 6.5  | 4       | 6    | 31.5    | 69    | 81      | 93    | 6    | 6.5                                | 48.0      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 14 FT            | 13                  | 14 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 31.6 | 29.0  | 29.0    | 33.0  | 6       | 15   | 48.5    | 6    | 15               | 31.0 | 5    | 6    | 5       | 9    | 30.8    | 70    | 82      | 94    | 6    | 6                                  | 47.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 16 FT            | 14                  | 15 | 8  | 8  | 5             | 6    | 5       | 8.5  | 30.8 | 30.0  | 30.0    | 34.0  | 6       | 14   | 48.0    | 6    | 14               | 31.0 | 5    | 6    | 5       | 8.5  | 30.1    | 71    | 83      | 95    | 6    | 6                                  | 47.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 18 FT            | 15                  | 16 | 8  | 8  | 6             | 8    | 5       | 8    | 35.1 | 31.0  | 31.0    | 35.0  | 6       | 14   | 53.5    | 6    | 14               | 36.5 | 6    | 8    | 5       | 8    | 29.9    | 72    | 84      | 96    | 6    | 6                                  | 47.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 20 FT            | 15                  | 17 | 8  | 8  | 6             | 7.5  | 5       | 8    | 35.1 | 31.0  | 31.0    | 35.0  | 6       | 13   | 53.5    | 6    | 13               | 36.5 | 6    | 8    | 5       | 7    | 29.4    | 73    | 85      | 97    | 6    | 6                                  | 47.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 22 FT            | 16                  | 18 | 8  | 8  | 6             | 8    | 5       | 7    | 33.4 | 32.0  | 36.0    | 36.0  | 6       | 13   | 52.5    | 6    | 13               | 36.5 | 6    | 8    | 5       | 6.5  | 28.0    | 74    | 86      | 98    | 6    | 6.5                                | 47.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 24 FT            | 17                  | 19 | 8  | 8  | 6             | 7.5  | 5       | 6.5  | 33.3 | 37.0  | 37.0    | 37.0  | 6       | 13   | 52.5    | 6    | 13               | 36.5 | 6    | 8    | 5       | 6.5  | 28.0    | 75    | 87      | 99    | 6    | 6                                  | 47.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |
| 26 FT            | 18                  | 20 | 8  | 8  | 6             | 7    | 5       | 6.5  | 33.1 | 38.0  | 38.0    | 38.0  | 6       | 13   | 52.0    | 6    | 13               | 36.5 | 6    | 8    | 5       | 6    | 28.1    | 76    | 88      | 100   | 6    | 6                                  | 47.5      | 5    | 12   | 5    | 10.5 | 0  |  |  |  |  |  |  |  |  |
| 28 FT            | 19                  | 21 | 8  | 8  | 6             | 7    | 5       | 6    | 33.1 | 39.0  | 39.0    | 39.0  | 6       | 13   | 52.0    | 6    | 13               | 36.0 | 6    | 7.5  | 6       | 7.5  | 31.3    | 77    | 89      | 101   | 7    | 7.5                                | 50.5      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |
| 30 FT            | 20                  | 22 | 8  | 8  | 6             | 7    | 6       | 7.5  | 37.1 | 44.0  | 44.0    | 44.0  | 6       | 12   | 51.5    | 6    | 12               | 35.5 | 6    | 7.5  | 6       | 7    | 31.4    | 78    | 90      | 102   | 7    | 7.5                                | 50.5      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |
| 32 FT            | 21                  | 23 | 8  | 8  | 6             | 6.5  | 6       | 7    | 37.1 | 45.0  | 45.0    | 45.0  | 6       | 12   | 51.0    | 6    | 12               | 34.5 | 6    | 7.5  | 6       | 6.5  | 31.5    | 79    | 91      | 103   | 7    | 7                                  | 50.5      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |
| 34 FT            | 22                  | 23 | 8  | 8  | 6             | 6.5  | 6       | 6.5  | 37.0 | 46.0  | 46.0    | 46.0  | 7       | 15   | 55.5    | 7    | 15               | 38.5 | 6    | 6.5  | 6       | 6.5  | 31.6    | 79    | 91      | 103   | 7    | 7                                  | 50.5      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |
| 36 FT            | 22                  | 24 | 8  | 8  | 6             | 6    | 6       | 6.5  | 37.1 | 46.0  | 46.0    | 46.0  | 7       | 15   | 55.5    | 7    | 15               | 39.5 | 6    | 7    | 6       | 6    | 31.6    | 80    | 92      | 104   | 7    | 7                                  | 50.0      | 5    | 12   | 5    | 9    | 0  |  |  |  |  |  |  |  |  |
| 38 FT            | 23                  | 25 | 8  | 8  | 6             | 6    | 6       | 6    | 37.1 | 47.0  | 47.0    | 47.0  | 7       | 15   | 55.0    | 7    | 15               | 38.5 | 6    | 7    | 6       | 6    | 31.9    | 81    | 93      | 105   | 7    | 6.5                                | 50.0      | 5    | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |
| 40 FT            | 24                  | 26 | 9  | 8  | 6             | 6    | 6       | 7    | 38.0 | 48.0  | 48.0    | 48.0  | 7       | 14   | 54.0    | 7    | 14               | 37.5 | 6    | 7    | 6       | 6.5  | 32.5    | 82    | 94      | 106   | 7    | 6.5                                | 50.0      | 5    | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |
| 42 FT            | 25                  | 27 | 9  | 8  | 6             | 6    | 6       | 6.5  | 38.0 | 49.0  | 49.0    | 49.0  | 7       | 14   | 53.5    | 7    | 14               | 37.0 | 6    | 7    | 6       | 6.5  | 32.6    | 83    | 95      | 107   | 7    | 6                                  | 50.0      | 5    | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |
| 44 FT            | 25                  | 28 | 9  | 8  | 7             | 7.5  | 6       | 6.5  | 38.1 | 49.0  | 49.0    | 49.0  | 7       | 14   | 53.0    | 7    | 14               | 37.5 | 6    | 6.5  | 6       | 6    | 32.8    | 84    | 96      | 108   | 7    | 6                                  | 50.0      | 5    | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |
| 46 FT            | 26                  | 28 | 9  | 8  | 7             | 7.5  | 6       | 6.5  | 38.1 | 50.0  | 50.0    | 50.0  | 7       | 13   | 52.5    | 7    | 13               | 36.5 | 6    | 6.5  | 6       | 6    | 32.9    | 84    | 96      | 108   | 7    | 6                                  | 50.0      | 5    | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |
| 48 FT            | 27                  | 29 | 9  | 8  | 7             | 7.5  | 6       | 6    | 38.1 | 51.0  | 51.0    | 51.0  | 7       | 14   | 51.5    | 7    | 14               | 36.5 | 6    | 6.5  | 6       | 6    | 33.0    | 85    | 97      | 109   | 7    | 6                                  | 50.0      | 5    | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |
| 50 FT            | 27                  | 30 | 10 | 8  | 7             | 7    | 6       | 7    | 39.0 | 51.0  | 51.0    | 51.0  | 7       | 13   | 51.5    | 7    | 13               | 36.0 | 6    | 6.5  | 6       | 6.5  | 33.5    | 86    | 98      | 110   | 7    | 6                                  | 50.0      | 5    | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |

| SPAN (S) = 10 FT |                  |    |    |    |               |      |         |      |      |       |         |        |      |         |       |      |                  |      |         |      |      |      |         |       |       |         |      |         |           |      |      | HEIGHT (HT) = 8 FT OR 9 FT OR 10 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|-------|---------|--------|------|---------|-------|------|------------------|------|---------|------|------|------|---------|-------|-------|---------|------|---------|-----------|------|------|-------------------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |        |      |         |       |      | BOTTOM SLAB BARS |      |         |      |      |      |         |       |       |         |      |         | WALL BARS |      |      |                                     |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |        |      | H2 BARS |       |      | A2 BARS          |      | J4 BARS |      |      |      | H3 BARS |       |       | B1 BARS |      | B2 BARS |           |      |      |                                     |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         |        | SIZE | SPA.    | C5    | SIZE | SPA.             | C6   | SIZE    | SPA. | SIZE | SPA. | C4      | K3    |       |         | SIZE | SPA.    | C7        | SIZE | SPA. | SIZE                                | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=8' | HT=9'   | HT=10' |      |         |       |      |                  |      |         |      |      |      |         | HT=8' | HT=9' | HT=10'  |      |         |           |      |      |                                     |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 13               | 10 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 50.9 | 29.0  | 33.0    | 33.0   | 5    | 14      | 100.0 | 5    | 14               | 29.5 | 5       | 8.5  | 6    | 7.5  | 71.6    | 102   | 114   | 126     | 5    | 6       | 47.5      | 5    | 12   | 5                                   | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 13               | 11 | 8  | 8  | 5             | 6.5  | 5       | 8.5  | 50.9 | 29.0  | 33.0    | 33.0   | 5    | 13      | 100.0 | 5    | 13               | 28.5 | 5       | 8.5  | 5    | 6    | 64.1    | 103   | 115   | 127     | 5    | 6       | 47.0      | 5    | 12   | 5                                   | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 9                | 10 | 9  | 8  | 5             | 7.5  | 5       | 6    | 69.0 | 25.0  | 25.0    | 29.0   | 5    | 12      | 73.0  | 5    | 12               | 30.0 | 5       | 7.5  | 5    | 6    | 55.4    | 102   | 114   | 126     | 6    | 6.5     | 49.5      | 5    | 10   | 5                                   | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 9                | 10 | 9  | 8  | 5             | 8.5  | 5       | 6    | 51.4 | 25.0  | 29.0    | 29.0   | 6    | 15      | 54.0  | 6    | 15               | 32.0 | 5       | 7    | 6    | 7    | 53.4    | 102   | 114   | 126     | 6    | 6       | 48.5      | 5    | 12   | 5                                   | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 10               | 11 | 9  | 8  | 5             | 8    | 5       | 6    | 48.0 | 26.0  | 30.0    | 30.0   | 5    | 12      | 48.0  | 5    | 12               | 28.5 | 5       | 7    | 6    | 7.5  | 50.9    | 103   | 115   | 127     | 6    | 6       | 48.0      | 5    | 12   | 5                                   | 11.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 11               | 12 | 9  | 8  | 5             | 7.5  | 5       | 6    | 46.0 | 31.0  | 31.0    | 31.0   | 6    | 16      | 49.5  | 6    | 16               | 31.0 | 5       | 6.5  | 5    | 6    | 46.3    | 104   | 116   | 128     | 6    | 6       | 48.0      | 5    | 12   | 5                                   | 10.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 12               | 13 | 9  | 8  | 5             | 7    | 5       | 6    | 44.5 | 32.0  | 32.0    | 32.0   | 6    | 15      | 48.5  | 6    | 15               | 31.0 | 5       | 6.5  | 5    | 6    | 45.0    | 105   | 117   | 129     | 6    | 6       | 47.5      | 5    | 12   | 5                                   | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 13               | 14 | 9  | 8  | 5             | 6.5  | 5       | 6    | 43.3 | 33.0  | 33.0    | 33.0   | 6    | 15      | 48.0  | 6    | 15               | 30.5 | 5       | 6    | 5    | 6    | 43.9    | 106   | 118   | 130     | 6    | 6       | 47.5      | 5    | 12   | 5                                   | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 14               | 15 | 9  | 8  | 5             | 6    | 5       | 6    | 42.1 | 34.0  | 34.0    | 34.0   | 6    | 15      | 47.5  | 6    | 15               | 30.5 | 5       | 6    | 5    | 6    | 43.0    | 107   | 119   | 131     | 6    | 6       | 47.5      | 5    | 12   | 5                                   | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 15               | 16 | 10 | 8  | 6             | 8.5  | 5       | 6.5  | 47.1 | 35.0  | 35.0    | 35.0   | 6    | 15      | 53.0  | 6    | 15               | 36.5 | 6       | 8    | 5    | 7    | 42.8    | 108   | 120   | 132     | 6    | 6       | 47.5      | 5    | 12   | 5                                   | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 15               | 17 | 10 | 8  | 6             | 8    | 6       | 8    | 50.6 | 35.0  | 35.0    | 35.0   | 6    | 13      | 52.5  | 6    | 13               | 36.5 | 6       | 8    | 5    | 6.5  | 42.3    | 109   | 121   | 133     | 6    | 6       | 47.5      | 5    | 12   | 5                                   | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 16               | 18 | 10 | 8  | 6             | 8    | 5       | 6    | 44.5 | 36.0  | 36.0    | 36.0   | 6    | 14      | 52.0  | 6    | 14               | 36.0 | 6       | 8    | 5    | 7    | 40.0    | 110   | 122   | 134     | 6    | 6.5     | 47.5      | 5    | 12   | 5                                   | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 17               | 19 | 10 | 8  | 6             | 7.5  | 6       | 8    | 48.4 | 37.0  | 37.0    | 37.0   | 6    | 14      | 51.5  | 6    | 14               | 36.0 | 6       | 8    | 5    | 6.5  | 40.1    | 111   | 123   | 135     | 6    | 6       | 47.5      | 5    | 12   | 5                                   | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 18               | 20 | 11 | 8  | 6             | 7.5  | 5       | 6    | 45.0 | 38.0  | 38.0    | 38.0   | 6    | 13      | 51.0  | 6    | 13               | 35.5 | 6       | 7.5  | 5    | 7    | 40.5    | 112   | 124   | 136     | 6    | 6       | 47.5      | 5    | 12   | 5                                   | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 19               | 21 | 11 | 8  | 6             | 7    | 6       | 8    | 49.0 | 39.0  | 39.0    | 39.0   | 6    | 13      | 50.5  | 6    | 13               | 35.0 | 6       | 7.5  | 5    | 7    | 40.5    | 113   | 125   | 137     | 7    | 7.5     | 50.5      | 5    | 12   | 5                                   | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 19               | 22 | 12 | 8  | 6             | 6.5  | 6       | 8    | 49.8 | 39.0  | 39.0    | 39.0   | 6    | 13      | 50.0  | 6    | 13               | 35.5 | 6       | 7.5  | 5    | 6.5  | 40.9    | 114   | 126   | 138     | 7    | 7.5     | 50.5      | 5    | 12   | 5                                   | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 20               | 23 | 12 | 8  | 6             | 6.5  | 6       | 8    | 49.6 | 40.0  | 40.0    | 40.0   | 6    | 12      | 49.5  | 6    | 12               | 34.5 | 6       | 7.5  | 5    | 6.5  | 41.0    | 115   | 127   | 139     | 7    | 7       | 50.5      | 5    | 12   | 5                                   | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 21               | 24 | 12 | 8  | 6             | 6.5  | 6       | 7.5  | 49.6 | 41.0  | 41.0    | 41.0   | 6    | 12      | 49.0  | 6    | 12               | 33.5 | 6       | 7.5  | 5    | 6.5  | 41.1    | 116   | 128   | 140     | 7    | 7       | 50.5      | 5    | 12   | 5                                   | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 22               | 25 | 12 | 8  | 6             | 6.5  | 6       | 6.5  | 49.6 | 42.0  | 42.0    | 42.0   | 7    | 15      | 53.0  | 7    | 15               | 38.0 | 6       | 7    | 5    | 6.5  | 41.3    | 117   | 129   | 141     | 7    | 6.5     | 50.5      | 5    | 12   | 5                                   | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 23               | 26 | 13 | 8  | 6             | 6    | 6       | 7.5  | 50.4 | 43.0  | 43.0    | 43.0   | 7    | 15      | 52.0  | 7    | 15               | 37.0 | 6       | 7    | 5    | 6    | 41.8    | 118   | 130   | 142     | 7    | 6.5     | 50.5      | 5    | 12   | 5                                   | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 23               | 26 | 13 | 8  | 6             | 6    | 6       | 7    | 50.3 | 43.0  | 43.0    | 43.0   | 7    | 15      | 52.0  | 7    | 15               | 37.5 | 6       | 6.5  | 5    | 6    | 41.6    | 118   | 130   | 142     | 7    | 6.5     | 50.5      | 5    | 12   | 5                                   | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 24               | 27 | 14 | 8  | 6             | 6    | 6       | 7.5  | 51.0 | 44.0  | 44.0    | 44.0   | 7    | 14      | 51.5  | 7    | 14               | 36.5 | 6       | 6.5  | 5    | 6    | 42.1    | 119   | 131   | 143     | 7    | 6       | 50.5      | 5    | 12   | 5                                   | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 24               | 28 | 14 | 8  | 7             | 7    | 6       | 7    | 51.1 | 44.0  | 44.0    | 44.0   | 7    | 14      | 51.5  | 7    | 14               | 37.0 | 6       | 6.5  | 5    | 6    | 42.1    | 120   | 132   | 144     | 7    | 6       | 50.5      | 5    | 12   | 5                                   | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 25               | 29 | 14 | 8  | 7             | 7.5  | 6       | 6.5  | 51.1 | 45.0  | 49.0    | 49.0   | 7    | 14      | 51.0  | 7    | 14               | 36.0 | 6       | 6.5  | 6    | 8.5  | 45.4    | 121   | 133   | 145     | 7    | 6       | 50.5      | 5    | 12   | 5                                   | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 26               | 30 | 14 | 8  | 7             | 7    | 6       | 6    | 51.1 | 46.0  | 50.0    | 50.0   | 7    | 15      | 50.5  | 7    | 15               | 36.0 | 6       | 6.5  | 6    | 8    | 45.6    | 122   | 134   | 146     | 7    | 6       | 50.5      | 5    | 12   | 5                                   | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 26               | 30 | 15 | 8  | 7             | 7    | 6       | 6.5  | 51.9 | 50.0  | 50.0    | 50.0   | 7    | 14      | 50.5  | 7    | 14               | 36.0 | 6       | 6    | 6    | 8    | 45.8    | 122   | 134   | 146     | 8    | 7.5     | 56.5      | 5    | 12   | 6                                   | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| SPAN (S) = 10 FT |                  |    |    |    |               |      |         |      |      |        |         |        |      |         |       |      |                  |      |         |      |      |      |         |        |        |         |      |         |           |      |      | HEIGHT (HT) = 11 FT OR 12 FT OR 13 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|--------|---------|--------|------|---------|-------|------|------------------|------|---------|------|------|------|---------|--------|--------|---------|------|---------|-----------|------|------|---------------------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |        |      |         |       |      | BOTTOM SLAB BARS |      |         |      |      |      |         |        |        |         |      |         | WALL BARS |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |        |      | H2 BARS |       |      | A2 BARS          |      | J4 BARS |      |      |      | H3 BARS |        |        | B1 BARS |      | B2 BARS |           |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         |        | SIZE | SPA.    | C5    | SIZE | SPA.             | C6   | SIZE    | SPA. | SIZE | SPA. | C4      | K3     |        |         | SIZE | SPA.    | C7        | SIZE | SPA. | SIZE                                  | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=11' | HT=12'  | HT=13' |      |         |       |      |                  |      |         |      |      |      |         | HT=11' | HT=12' | HT=13'  |      |         |           |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 13               | 10 | 9  | 10 | 5             | 6.5  | 5       | 6.5  | 51.9 | 33.0   | 33.0    | 33.0   | 5    | 14      | 101.0 | 5    | 14               | 30.0 | 5       | 7.5  | 6    | 6    | 85.4    | 138    | 150    | 162     | 6    | 7       | 51.0      | 5    | 12   | 5                                     | 8.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 13               | 11 | 9  | 10 | 5             | 6.5  | 5       | 6    | 51.9 | 33.0   | 33.0    | 33.0   | 5    | 13      | 101.0 | 5    | 13               | 29.0 | 5       | 8    | 6    | 6    | 82.6    | 139    | 151    | 163     | 5    | 6       | 47.5      | 5    | 12   | 5                                     | 8.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 9                | 10 | 10 | 10 | 5             | 7.5  | 6       | 7    | 52.5 | 29.0   | 29.0    | 33.0   | 5    | 12      | 101.5 | 5    | 12               | 30.5 | 5       | 7    | 6    | 6    | 74.5    | 138    | 150    | 162     | 6    | 6       | 50.0      | 5    | 10   | 5                                     | 8    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 9                | 11 | 10 | 10 | 5             | 8.5  | 6       | 7    | 70.4 | 29.0   | 29.0    | 33.0   | 5    | 12      | 50.5  | 5    | 12               | 29.5 | 5       | 7    | 6    | 6    | 71.0    | 139    | 151    | 163     | 6    | 6.5     | 49.5      | 5    | 12   | 5                                     | 8    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 10               | 12 | 11 | 10 | 5             | 8    | 5       | 6    | 62.6 | 30.0   | 30.0    | 30.0   | 5    | 12      | 47.5  | 5    | 12               | 29.0 | 5       | 7    | 5    | 6    | 64.6    | 140    | 152    | 164     | 6    | 6.5     | 48.5      | 5    | 12   | 5                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 11               | 12 | 11 | 10 | 5             | 7.5  | 5       | 6.5  | 60.9 | 31.0   | 31.0    | 31.0   | 5    | 12      | 46.5  | 5    | 12               | 28.5 | 5       | 6.5  | 6    | 6.5  | 64.4    | 140    | 152    | 164     | 6    | 6       | 48.0      | 5    | 12   | 5                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 11               | 13 | 11 | 10 | 5             | 7.5  | 6       | 7.5  | 60.6 | 31.0   | 31.0    | 35.0   | 6    | 15      | 48.5  | 6    | 15               | 31.5 | 5       | 6    | 6    | 6.5  | 63.6    | 141    | 153    | 165     | 6    | 6       | 48.0      | 5    | 12   | 5                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 12               | 14 | 11 | 10 | 5             | 7    | 6       | 7.5  | 59.6 | 32.0   | 32.0    | 36.0   | 6    | 14      | 48.0  | 6    | 14               | 31.5 | 5       | 6    | 6    | 6.5  | 62.5    | 142    | 154    | 166     | 6    | 6       | 48.0      | 5    | 12   | 5                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 13               | 15 | 12 | 10 | 5             | 6.5  | 6       | 7.5  | 58.4 | 33.0   | 33.0    | 37.0   | 6    | 14      | 47.5  | 6    | 14               | 31.0 | 6       | 8    | 6    | 7    | 61.1    | 143    | 155    | 167     | 6    | 6       | 48.0      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 14               | 16 | 12 | 10 | 5             | 6    | 6       | 7    | 58.0 | 34.0   | 38.0    | 38.0   | 6    | 14      | 47.0  | 6    | 14               | 31.0 | 6       | 8    | 6    | 6.5  | 60.5    | 144    | 156    | 168     | 6    | 6.5     | 48.0      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 15               | 17 | 13 | 10 | 6             | 8    | 6       | 7    | 64.0 | 35.0   | 39.0    | 39.0   | 6    | 14      | 52.5  | 6    | 14               | 37.0 | 6       | 8    | 6    | 6.5  | 59.9    | 145    | 157    | 169     | 6    | 6.5     | 48.0      | 5    | 12   | 5                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 15               | 18 | 13 | 10 | 6             | 7.5  | 6       | 7    | 61.1 | 35.0   | 35.0    | 39.0   | 6    | 13      | 52.0  | 6    | 13               | 37.0 | 6       | 8    | 6    | 7.5  | 57.4    | 146    | 158    | 170     | 6    | 6.5     | 48.0      | 5    | 12   | 5                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 16               | 19 | 13 | 10 | 6             | 7.5  | 6       | 6.5  | 61.3 | 36.0   | 36.0    | 40.0   | 6    | 13      | 51.5  | 6    | 13               | 36.5 | 6       | 7.5  | 6    | 7.5  | 57.4    | 147    | 159    | 171     | 6    | 6       | 48.0      | 5    | 12   | 5                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 17               | 20 | 14 | 10 | 6             | 7.5  | 6       | 7    | 61.8 | 37.0   | 37.0    | 41.0   | 6    | 13      | 51.5  | 6    | 13               | 36.5 | 6       | 7.5  | 6    | 7.5  | 57.6    | 148    | 160    | 172     | 6    | 6       | 48.0      | 5    | 12   | 5                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 18               | 21 | 14 | 10 | 6             | 7    | 6       | 6.5  | 61.9 | 38.0   | 38.0    | 42.0   | 6    | 13      | 51.0  | 6    | 13               | 36.5 | 6       | 7.5  | 6    | 7.5  | 57.8    | 149    | 161    | 173     | 7    | 7.5     | 51.0      | 5    | 12   | 5                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 19               | 22 | 15 | 10 | 6             | 7    | 6       | 6.5  | 62.4 | 39.0   | 43.0    | 43.0   | 6    | 13      | 50.0  | 6    | 13               | 35.5 | 6       | 7.5  | 6    | 7.5  | 58.0    | 150    | 162    | 174     | 7    | 7.5     | 51.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 20               | 23 | 15 | 10 | 6             | 7    | 6       | 6    | 62.5 | 44.0   | 44.0    | 44.0   | 6    | 12      | 49.5  | 6    | 12               | 34.5 | 6       | 7    | 6    | 7.5  | 58.1    | 151    | 163    | 175     | 7    | 7       | 51.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 21               | 24 | 16 | 10 | 6             | 6.5  | 6       | 6.5  | 63.0 | 41.0   | 45.0    | 45.0   | 6    | 12      | 48.5  | 6    | 12               | 33.5 | 6       | 7    | 6    | 7.5  | 58.5    | 152    | 164    | 176     | 7    | 7       | 51.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 21               | 25 | 16 | 10 | 6             | 6    | 6       | 6    | 62.9 | 45.0   | 45.0    | 45.0   | 6    | 12      | 48.5  | 6    | 12               | 34.0 | 6       | 7    | 6    | 7.5  | 58.6    | 153    | 165    | 177     | 7    | 6.5     | 51.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 22               | 26 | 17 | 10 | 6             | 6.5  | 6       | 6    | 63.5 | 42.0   | 46.0    | 46.0   | 7    | 15      | 52.5  | 7    | 15               | 38.5 | 6       | 7    | 6    | 7    | 59.0    | 154    | 166    | 178     | 7    | 6.5     | 51.0      | 5    | 12   | 6                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 23               | 26 | 17 | 10 | 6             | 6    | 6       | 6    | 63.5 | 47.0   | 47.0    | 47.0   | 7    | 15      | 52.0  | 7    | 15               | 37.5 | 6       | 6    | 6    | 7    | 58.9    | 154    | 166    | 178     | 7    | 6.5     | 51.0      | 5    | 12   | 6                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 24               | 27 | 18 | 10 | 6             | 6    | 6       | 6    | 64.1 | 44.0   | 48.0    | 48.0   | 7    | 15      | 51.5  | 7    | 15               | 37.0 | 6       | 6.5  | 6    | 6.5  | 59.3    | 155    | 167    | 179     | 7    | 6       | 51.0      | 5    | 12   | 6                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 24               | 28 | 19 | 10 | 7             | 8    | 6       | 6    | 64.6 | 44.0   | 48.0    | 48.0   | 7    | 14      | 51.5  | 7    | 14               | 37.0 | 6       | 6.5  | 6    | 6.5  | 59.6    | 156    | 168    | 180     | 7    | 6       | 51.0      | 5    | 12   | 6                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 25               | 29 | 19 | 10 | 7             | 7.5  | 6       | 6    | 64.8 | 49.0   | 49.0    | 49.0   | 7    | 15      | 51.0  | 7    | 15               | 36.5 | 6       | 6.5  | 6    | 6.5  | 59.9    | 157    | 169    | 181     | 7    | 6       | 51.0      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 25               | 30 | 20 | 10 | 7             | 7.5  | 7       | 8    | 70.3 | 49.0   | 49.0    | 49.0   | 7    | 15      | 51.0  | 7    | 15               | 36.5 | 6       | 6.5  | 6    | 6.5  | 60.3    | 158    | 170    | 182     | 7    | 6       | 51.0      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 26               | 31 | 20 | 10 | 7             | 7    | 7       | 7    | 70.4 | 50.0   | 50.0    | 50.0   | 7    | 15      | 50.5  | 7    | 15               | 36.5 | 6       | 6    | 6    | 6    | 60.5    | 159    | 171    | 183     | 7    | 6       | 51.0      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS, AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**CONCRETE  
DOUBLE BOX CULVERT**  
MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS  
SPAN (S): 10 FEET  
HEIGHT (HT): 11 THRU 13 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

**703.47**

SHEET NO.  
15 OF 27

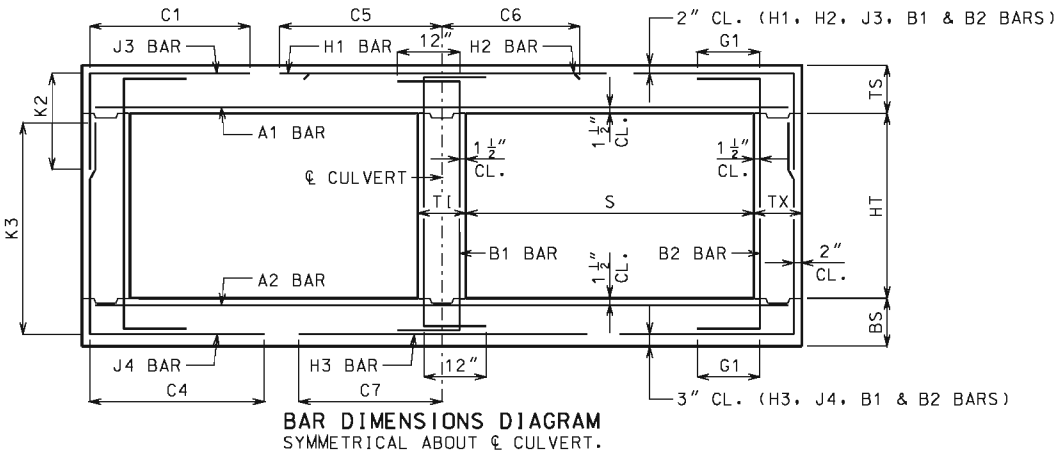
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 11 FT |                  |    |    |    |               |      |         |      |      |       |       |       |         |      |         |      |         |      |                  |      |      |      |      |       |         |       |      | HEIGHT (HT) = 6 FT OR 7 FT OR 8 FT |           |         |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|-------|-------|-------|---------|------|---------|------|---------|------|------------------|------|------|------|------|-------|---------|-------|------|------------------------------------|-----------|---------|------|------|------|----|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |       |         |      |         |      |         |      | BOTTOM SLAB BARS |      |      |      |      |       |         |       |      |                                    | WALL BARS |         |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |       | H1 BARS |      | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      |      |       | H3 BARS |       |      | B1 BARS                            |           | B2 BARS |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |       | SIZE    | SPA. | C5      | SIZE | SPA.    | C6   | SIZE             | SPA. | SIZE | SPA. | C4   | K3    |         |       | SIZE | SPA.                               | C7        | SIZE    | SPA. | SIZE | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=6' | HT=7' | HT=8' |         |      |         |      |         |      |                  |      |      |      |      | HT=6' | HT=7'   | HT=8' |      |                                    |           |         |      |      |      |    |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14               | 10 | 8  | 8  | 5             | 6    | 4       | 6.5  | 52.5 | 30.0  | 30.0  | 30.0  | 5       | 13   | 106.5   | 5    | 13      | 30.0 | 5                | 8    | 5    | 7    | 52.9 | 78    | 90      | 102   | 6    | 7                                  | 53.5      | 5       | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 14               | 11 | 8  | 8  | 5             | 6    | 4       | 6    | 52.5 | 30.0  | 30.0  | 30.0  | 5       | 12   | 106.5   | 5    | 12      | 29.0 | 5                | 8    | 5    | 8    | 49.1 | 79    | 91      | 103   | 6    | 7                                  | 53.0      | 5       | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 10               | 10 | 8  | 8  | 5             | 7    | 5       | 6    | 45.6 | 26.0  | 26.0  | 30.0  | 6       | 16   | 72.5    | 6    | 16      | 35.0 | 5                | 7    | 5    | 6.5  | 43.0 | 78    | 90      | 102   | 6    | 6                                  | 52.5      | 5       | 10.5 | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 10               | 11 | 8  | 8  | 5             | 7.5  | 5       | 6    | 40.8 | 26.0  | 26.0  | 30.0  | 6       | 15   | 58.5    | 6    | 15      | 33.5 | 5                | 6.5  | 5    | 7.5  | 39.5 | 79    | 91      | 103   | 6    | 6                                  | 52.0      | 5       | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 11               | 12 | 8  | 8  | 5             | 7.5  | 5       | 7    | 38.6 | 27.0  | 27.0  | 31.0  | 6       | 15   | 54.5    | 6    | 15      | 33.0 | 5                | 6.5  | 5    | 8    | 37.3 | 80    | 92      | 104   | 6    | 6                                  | 51.5      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 12               | 13 | 8  | 8  | 5             | 7    | 5       | 7.5  | 36.6 | 28.0  | 28.0  | 32.0  | 6       | 14   | 53.0    | 6    | 14      | 32.5 | 5                | 6    | 5    | 8    | 35.6 | 81    | 93      | 105   | 6    | 6                                  | 51.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 13               | 14 | 8  | 8  | 5             | 6.5  | 5       | 7.5  | 35.3 | 29.0  | 33.0  | 33.0  | 6       | 14   | 52.0    | 6    | 14      | 32.5 | 6                | 8.5  | 5    | 8.5  | 34.6 | 82    | 94      | 106   | 6    | 6                                  | 51.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 14               | 15 | 8  | 8  | 5             | 6    | 5       | 8    | 34.1 | 30.0  | 34.0  | 34.0  | 6       | 13   | 51.5    | 6    | 13      | 32.0 | 6                | 8    | 5    | 8.5  | 33.8 | 83    | 95      | 107   | 6    | 6                                  | 51.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 15               | 16 | 8  | 8  | 6             | 8    | 5       | 7.5  | 38.3 | 31.0  | 35.0  | 35.0  | 6       | 13   | 57.0    | 6    | 13      | 38.0 | 6                | 7.5  | 5    | 8    | 33.1 | 84    | 96      | 108   | 6    | 6                                  | 51.0      | 5       | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 16               | 17 | 8  | 8  | 6             | 8    | 5       | 7    | 37.5 | 32.0  | 36.0  | 36.0  | 6       | 12   | 56.5    | 6    | 12      | 38.0 | 6                | 7    | 5    | 7    | 32.6 | 85    | 97      | 109   | 7    | 7                                  | 53.5      | 5       | 12   | 5    | 10.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 17               | 18 | 8  | 8  | 6             | 7.5  | 5       | 6.5  | 37.1 | 37.0  | 37.0  | 37.0  | 6       | 12   | 56.5    | 6    | 12      | 38.0 | 6                | 7    | 5    | 6.5  | 32.4 | 86    | 98      | 110   | 7    | 7                                  | 53.5      | 5       | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 18               | 20 | 8  | 8  | 6             | 7    | 5       | 6.5  | 37.1 | 38.0  | 38.0  | 38.0  | 6       | 12   | 56.0    | 6    | 12      | 37.5 | 6                | 7.5  | 5    | 6    | 32.4 | 88    | 100     | 112   | 6    | 6                                  | 50.5      | 5       | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 19               | 20 | 8  | 8  | 6             | 6.5  | 5       | 6    | 35.1 | 39.0  | 39.0  | 39.0  | 6       | 12   | 55.0    | 6    | 12      | 37.5 | 6                | 7    | 5    | 6    | 30.9 | 88    | 100     | 112   | 6    | 6                                  | 50.5      | 5       | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 20               | 21 | 8  | 8  | 6             | 6.5  | 6       | 7.5  | 39.1 | 44.0  | 44.0  | 44.0  | 6       | 12   | 54.5    | 6    | 12      | 37.5 | 6                | 6.5  | 6    | 7.5  | 33.9 | 89    | 101     | 113   | 7    | 7                                  | 53.5      | 5       | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 21               | 22 | 8  | 8  | 6             | 6.5  | 6       | 7    | 39.1 | 45.0  | 45.0  | 45.0  | 6       | 12   | 54.5    | 6    | 12      | 37.0 | 6                | 6    | 6    | 7    | 34.0 | 90    | 102     | 114   | 7    | 7                                  | 53.5      | 5       | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 22               | 23 | 8  | 8  | 6             | 6    | 6       | 6.5  | 39.1 | 46.0  | 46.0  | 46.0  | 7       | 15   | 59.0    | 7    | 15      | 41.0 | 6                | 6    | 6    | 6.5  | 34.1 | 91    | 103     | 115   | 7    | 7                                  | 53.5      | 5       | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 23               | 24 | 8  | 8  | 6             | 6    | 6       | 6    | 39.1 | 47.0  | 47.0  | 47.0  | 7       | 15   | 58.5    | 7    | 15      | 40.5 | 6                | 6    | 6    | 6    | 34.3 | 92    | 104     | 116   | 7    | 7                                  | 53.5      | 5       | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 23               | 26 | 9  | 8  | 7             | 7.5  | 6       | 7    | 40.3 | 47.0  | 47.0  | 47.0  | 7       | 15   | 58.0    | 7    | 15      | 41.0 | 6                | 6.5  | 6    | 6.5  | 34.8 | 94    | 106     | 118   | 7    | 6.5                                | 53.5      | 5       | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 24               | 27 | 9  | 8  | 7             | 7.5  | 6       | 7    | 40.3 | 48.0  | 48.0  | 48.0  | 7       | 14   | 57.5    | 7    | 14      | 40.5 | 6                | 6.5  | 6    | 6.5  | 34.9 | 95    | 107     | 119   | 7    | 6                                  | 53.5      | 5       | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 25               | 27 | 9  | 8  | 7             | 7.5  | 6       | 6.5  | 40.1 | 49.0  | 49.0  | 49.0  | 7       | 14   | 57.0    | 7    | 14      | 39.5 | 6                | 6    | 6    | 6.5  | 35.0 | 95    | 107     | 119   | 7    | 6                                  | 53.5      | 5       | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 26               | 28 | 10 | 8  | 7             | 7.5  | 6       | 7    | 40.9 | 50.0  | 50.0  | 50.0  | 7       | 13   | 56.0    | 7    | 13      | 38.5 | 6                | 6    | 6    | 7    | 35.5 | 96    | 108     | 120   | 7    | 6                                  | 53.5      | 5       | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 27               | 29 | 10 | 8  | 7             | 7    | 6       | 7    | 41.0 | 51.0  | 51.0  | 51.0  | 7       | 13   | 55.0    | 7    | 13      | 37.5 | 6                | 6    | 6    | 6.5  | 35.8 | 97    | 109     | 121   | 8    | 7.5                                | 59.5      | 5       | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 27               | 30 | 11 | 8  | 7             | 6.5  | 5       | 6    | 37.9 | 47.0  | 47.0  | 47.0  | 7       | 13   | 54.5    | 7    | 13      | 38.0 | 6                | 6    | 6    | 7    | 36.1 | 98    | 110     | 122   | 8    | 7.5                                | 59.5      | 5       | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 28               | 31 | 11 | 8  | 7             | 6.5  | 6       | 7.5  | 41.9 | 52.0  | 52.0  | 52.0  | 7       | 12   | 54.0    | 7    | 12      | 37.5 | 6                | 6    | 6    | 7    | 36.4 | 99    | 111     | 123   | 8    | 7                                  | 59.5      | 5       | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 29               | 32 | 11 | 8  | 7             | 6.5  | 6       | 7    | 41.9 | 53.0  | 53.0  | 53.0  | 7       | 12   | 53.5    | 7    | 12      | 37.0 | 6                | 6    | 6    | 6.5  | 36.5 | 100   | 112     | 124   | 8    | 7                                  | 59.0      | 5       | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 29               | 33 | 11 | 8  | 7             | 6.5  | 6       | 7    | 42.0 | 53.0  | 53.0  | 53.0  | 7       | 12   | 53.5    | 7    | 12      | 37.0 | 6                | 6    | 6    | 6.5  | 36.6 | 101   | 113     | 125   | 8    | 7                                  | 59.0      | 5       | 12   | 5    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 11 FT |                  |    |    |    |               |      |         |      |      |       |         |        |         |      |         |      |                  |      |      |      |         |      |         |       |         |        |      |      |           |      |      | HEIGHT (HT) = 9 FT OR 10 FT OR 11 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|-------|---------|--------|---------|------|---------|------|------------------|------|------|------|---------|------|---------|-------|---------|--------|------|------|-----------|------|------|--------------------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |        |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |      |         |       |         |        |      |      | WALL BARS |      |      |                                      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |        | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      | B1 BARS |       | B2 BARS |        |      |      |           |      |      |                                      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | SIZE    | SPA. | C4      | K3    |         |        | SIZE | SPA. | C7        | SIZE | SPA. | SIZE                                 | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=9' | HT=10'  | HT=11' |         |      |         |      |                  |      |      |      |         |      |         | HT=9' | HT=10'  | HT=11' |      |      |           |      |      |                                      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14               | 10 | 8  | 9  | 5             | 6    | 5       | 8    | 54.6 | 34.0  | 34.0    | 34.0   | 5       | 13   | 109.0   | 5    | 13               | 30.5 | 5    | 7.5  | 6       | 6    | 76.4    | 114   | 126     | 138    | 6    | 6.5  | 54.0      | 5    | 12   | 5                                    | 10   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 14               | 11 | 8  | 9  | 5             | 6    | 5       | 8    | 54.6 | 34.0  | 34.0    | 34.0   | 5       | 12   | 109.0   | 5    | 12               | 29.5 | 5    | 7.5  | 6       | 6.5  | 71.8    | 115   | 127     | 139    | 6    | 7    | 53.5      | 5    | 12   | 5                                    | 10   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 10               | 10 | 9  | 9  | 5             | 7    | 5       | 6    | 82.4 | 30.0  | 30.0    | 30.0   | 6       | 16   | 84.0    | 6    | 16               | 35.0 | 5    | 7    | 6       | 6.5  | 62.1    | 114   | 126     | 138    | 7    | 7    | 55.5      | 5    | 10.5 | 5                                    | 10   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 10               | 11 | 9  | 9  | 5             | 7.5  | 5       | 6    | 56.3 | 30.0  | 30.0    | 30.0   | 6       | 15   | 58.5    | 6    | 15               | 33.5 | 5    | 6.5  | 6       | 6.5  | 58.1    | 115   | 127     | 139    | 6    | 6    | 52.0      | 5    | 12   | 5                                    | 9.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 11               | 12 | 10 | 9  | 5             | 7.5  | 5       | 6    | 52.4 | 31.0  | 31.0    | 31.0   | 6       | 15   | 54.5    | 6    | 15               | 33.0 | 5    | 6    | 5       | 6    | 52.1    | 116   | 128     | 140    | 6    | 6    | 51.5      | 5    | 12   | 5                                    | 10.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 11               | 13 | 10 | 9  | 5             | 7.5  | 5       | 6    | 49.6 | 31.0  | 31.0    | 31.0   | 6       | 14   | 52.5    | 6    | 14               | 32.5 | 5    | 6    | 5       | 6    | 50.5    | 117   | 129     | 141    | 6    | 6    | 51.5      | 5    | 12   | 5                                    | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 12               | 14 | 10 | 9  | 5             | 6.5  | 5       | 6    | 48.1 | 32.0  | 32.0    | 32.0   | 6       | 13   | 52.0    | 6    | 13               | 32.5 | 6    | 8    | 5       | 6    | 49.0    | 118   | 130     | 142    | 6    | 6    | 51.0      | 5    | 12   | 5                                    | 9    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 14               | 15 | 10 | 9  | 5             | 6    | 5       | 6    | 47.1 | 34.0  | 34.0    | 34.0   | 6       | 14   | 51.5    | 6    | 14               | 32.5 | 6    | 8    | 5       | 6    | 47.9    | 119   | 131     | 143    | 6    | 6    | 51.0      | 5    | 12   | 5                                    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 15               | 16 | 10 | 9  | 6             | 8    | 6       | 8    | 55.0 | 35.0  | 35.0    | 35.0   | 6       | 13   | 57.0    | 6    | 13               | 38.5 | 6    | 7.5  | 5       | 6    | 46.9    | 120   | 132     | 144    | 6    | 6    | 51.0      | 5    | 12   | 5                                    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 16               | 17 | 10 | 9  | 6             | 8    | 6       | 7.5  | 53.9 | 36.0  | 36.0    | 40.0   | 6       | 13   | 56.5    | 6    | 13               | 38.0 | 6    | 7    | 6       | 7    | 49.0    | 121   | 133     | 145    | 6    | 6    | 51.0      | 5    | 12   | 5                                    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 17               | 18 | 11 | 9  | 6             | 7.5  | 6       | 8    | 54.0 | 37.0  | 37.0    | 37.0   | 6       | 13   | 56.0    | 6    | 13               | 38.0 | 6    | 6.5  | 5       | 6    | 45.9    | 122   | 134     | 146    | 6    | 6    | 51.0      | 5    | 12   | 5                                    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 18               | 20 | 12 | 9  | 6             | 7    | 6       | 8    | 54.4 | 38.0  | 38.0    | 38.0   | 6       | 13   | 55.5    | 6    | 13               | 38.0 | 6    | 7.5  | 5       | 6.5  | 46.0    | 124   | 136     | 148    | 6    | 6    | 51.0      | 5    | 12   | 5                                    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 18               | 20 | 12 | 9  | 6             | 7    | 6       | 8    | 52.1 | 38.0  | 38.0    | 38.0   | 6       | 12   | 54.5    | 6    | 12               | 37.5 | 6    | 6.5  | 5       | 6.5  | 43.5    | 124   | 136     | 148    | 6    | 6    | 51.0      | 5    | 12   | 5                                    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 19               | 22 | 12 | 9  | 6             | 6.5  | 6       | 7.5  | 52.1 | 39.0  | 39.0    | 39.0   | 6       | 12   | 54.5    | 6    | 12               | 37.5 | 6    | 7    | 5       | 6.5  | 43.6    | 126   | 138     | 150    | 7    | 7.5  | 54.0      | 5    | 12   | 5                                    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 20               | 23 | 12 | 9  | 6             | 6.5  | 6       | 7    | 52.1 | 40.0  | 40.0    | 40.0   | 6       | 12   | 54.0    | 6    | 12               | 37.5 | 6    | 7    | 5       | 6    | 43.8    | 127   | 139     | 151    | 7    | 7    | 54.0      | 5    | 12   | 5                                    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 21               | 24 | 13 | 9  | 6             | 6    | 6       | 7.5  | 52.8 | 41.0  | 41.0    | 41.0   | 6       | 12   | 53.0    | 6    | 12               | 37.0 | 6    | 6.5  | 5       | 6    | 44.1    | 128   | 140     | 152    | 7    | 7    | 54.0      | 5    | 12   | 5                                    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 22               | 25 | 13 | 9  | 6             | 6    | 6       | 7    | 52.8 | 42.0  | 42.0    | 42.0   | 7       | 15   | 56.5    | 7    | 15               | 41.0 | 6    | 6.5  | 5       | 6    | 44.3    | 129   | 141     | 153    | 7    | 6.5  | 54.0      | 5    | 12   | 5                                    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 23               | 26 | 13 | 9  | 6             | 6    | 6.5     | 52.8 | 43.0 | 43.0  | 43.0    | 7      | 15      | 57.0 | 7       | 15   | 40.0             | 6    | 6.5  | 5    | 6       | 44.4 | 130     | 142   | 154     | 7      | 6.5  | 54.0 | 5         | 12   | 5    | 6.5                                  | 0    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 24               | 27 | 14 | 9  | 7             | 8    | 6       | 7    | 53.4 | 44.0  | 44.0    | 44.0   | 7       | 14   | 56.0    | 7    | 14               | 39.5 | 6    | 6.5  | 5       | 6    | 44.8    | 131   | 143     | 155    | 7    | 6    | 54.0      | 5    | 12   | 5                                    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 25               | 28 | 14 | 9  | 7             | 7.5  | 6       | 7    | 53.4 | 45.0  | 45.0    | 45.0   | 7       | 14   | 55.0    | 7    | 14               | 38.5 | 6    | 6.5  | 5       | 6    | 44.9    | 132   | 144     | 156    | 7    | 6    | 54.0      | 5    | 12   | 5                                    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 25               | 29 | 14 | 9  | 7             | 7    | 6       | 6    | 53.4 | 45.0  | 49.0    | 49.0   | 7       | 14   | 55.0    | 7    | 14               | 39.0 | 6    | 6    | 6       | 8.5  | 47.9    | 133   | 145     | 157    | 8    | 7.5  | 60.0      | 5    | 12   | 5                                    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 26               | 30 | 15 | 9  | 7             | 7    | 6       | 6.5  | 54.1 | 50.0  | 50.0    | 50.0   | 7       | 13   | 54.0    | 7    | 13               | 38.0 | 6    | 6    | 6       | 8    | 48.4    | 134   | 146     | 158    | 8    | 7.5  | 60.0      | 5    | 12   | 6                                    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 27               | 31 | 15 | 9  | 7             | 7    | 6       | 6.5  | 54.1 | 51.0  | 51.0    | 51.0   | 7       | 13   | 54.0    | 7    | 13               | 37.0 | 6    | 6    | 6       | 7.5  | 48.6    | 135   | 147     | 159    | 8    | 7    | 60.0      | 5    | 12   | 6                                    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 27               | 32 | 16 | 9  | 7             | 6.5  | 6       | 6.5  | 55.0 | 51.0  | 51.0    | 51.0   | 7       | 13   | 53.5    | 7    | 13               | 37.5 | 6    | 6    | 6       | 7.5  | 48.9    | 136   | 148     | 160    | 8    | 7    | 60.0      | 5    | 12   | 6                                    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 28               | 32 | 16 | 9  | 7             | 6.5  | 6       | 6    | 54.9 | 52.0  | 52.0    | 52.0   | 7       | 13   | 53.0    | 7    | 13               | 37.0 | 7    | 8    | 6       | 7.5  | 49.0    | 136   | 148     | 160    | 8    | 7    | 60.0      | 5    | 12   | 6                                    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 29               | 33 | 17 | 9  | 7             | 6.5  | 6       | 6.5  | 55.6 | 53.0  | 53.0    | 53.0   | 7       | 13   | 52.5    | 7    | 13               | 37.0 | 7    | 7.5  | 6       | 7    | 49.5    | 137   | 149     | 161    | 8    | 7    | 60.0      | 5    | 12   | 6                                    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| SPAN (S) = 11 FT |                  |    |    |    |               |      |         |      |      |        |         |        |         |      |         |      |                  |      |      |      |         |      |         |        |         |        |      |      |           |      |      | HEIGHT (HT) = 12 FT OR 13 FT OR 14 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|--------|---------|--------|---------|------|---------|------|------------------|------|------|------|---------|------|---------|--------|---------|--------|------|------|-----------|------|------|---------------------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |        |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |      |         |        |         |        |      |      | WALL BARS |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |        | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      | B1 BARS |        | B2 BARS |        |      |      |           |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | SIZE    | SPA. | C4      | K3     |         |        | SIZE | SPA. | C7        | SIZE | SPA. | SIZE                                  | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=12' | HT=13'  | HT=14' |         |      |         |      |                  |      |      |      |         |      |         | HT=12' | HT=13'  | HT=14' |      |      |           |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14               | 12 | 9  | 11 | 5             | 6    | 5       | 6    | 55.6 | 34.0   | 34.0    | 34.0   | 5       | 13   | 110.0   | 5    | 13               | 30.5 | 5    | 8    | 6       | 6    | 94.6    | 152    | 164     | 176    | 5    | 6    | 51.5      | 5    | 12   | 5                                     | 8.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 14               | 12 | 9  | 11 | 5             | 6    | 6       | 7.5  | 55.6 | 34.0   | 34.0    | 38.0   | 5       | 12   | 110.0   | 5    | 12               | 30.0 | 5    | 7.5  | 6       | 6    | 89.4    | 152    | 164     | 176    | 5    | 6    | 51.0      | 5    | 12   | 5                                     | 8.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 10               | 12 | 10 | 11 | 5             | 7    | 6       | 7    | 58.3 | 30.0   | 30.0    | 34.0   | 6       | 16   | 112.5   | 6    | 16               | 35.5 | 5    | 7    | 6       | 6.5  | 83.4    | 152    | 164     | 176    | 6    | 7    | 53.5      | 5    | 11.5 | 5                                     | 8    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 10               | 12 | 10 | 11 | 5             | 7.5  | 6       | 6.5  | 78.8 | 30.0   | 34.0    | 34.0   | 6       | 15   | 57.5    | 6    | 15               | 34.0 | 5    | 6.5  | 6       | 6    | 77.1    | 152    | 164     | 176    | 6    | 6.5  | 52.5      | 5    | 12   | 5                                     | 7.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 10               | 13 | 10 | 11 | 5             | 7.5  | 6       | 6    | 70.1 | 34.0   | 34.0    | 34.0   | 6       | 14   | 54.0    | 6    | 14               | 33.5 | 5    | 6    | 6       | 6    | 74.1    | 153    | 165     | 177    | 6    | 6.5  | 52.0      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 11               | 13 | 11 | 11 | 5             | 7.5  | 6       | 7    | 67.0 | 31.0   | 31.0    | 35.0   | 6       | 14   | 52.5    | 6    | 14               | 33.0 | 5    | 6    | 6       | 6    | 69.9    | 153    | 165     | 177    | 6    | 6    | 51.5      | 5    | 12   | 5                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 12               | 14 | 12 | 11 | 5             | 7    | 6       | 8    | 64.6 | 32.0   | 32.0    | 36.0   | 6       | 14   | 51.5    | 6    | 14               | 33.0 | 6    | 8    | 6       | 7    | 67.6    | 154    | 166     | 178    | 6    | 6    | 51.5      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 13               | 15 | 12 | 11 | 5             | 6.5  | 6       | 7    | 63.4 | 33.0   | 37.0    | 37.0   | 6       | 13   | 51.0    | 6    | 13               | 33.0 | 6    | 7.5  | 6       | 6.5  | 66.4    | 155    | 167     | 179    | 6    | 6    | 51.0      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 14               | 16 | 13 | 11 | 5             | 6    | 6       | 7    | 62.3 | 34.0   | 38.0    | 38.0   | 6       | 13   | 51.0    | 6    | 13               | 33.0 | 6    | 7    | 6       | 7    | 64.8    | 156    | 168     | 180    | 6    | 6    | 51.0      | 5    | 12   | 5                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 15               | 17 | 13 | 11 | 6             | 8    | 6       | 6.5  | 67.6 | 35.0   | 39.0    | 39.0   | 6       | 12   | 56.5    | 6    | 12               | 38.5 | 6    | 6.5  | 6       | 6    | 63.8    | 157    | 169     | 181    | 6    | 6    | 51.0      | 5    | 12   | 5                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 16               | 19 | 14 | 11 | 6             | 8    | 6       | 6.5  | 67.4 | 36.0   | 40.0    | 40.0   | 6       | 12   | 56.0    | 6    | 12               | 38.5 | 6    | 7.5  | 6       | 6.5  | 63.8    | 159    | 171     | 183    | 6    | 6    | 51.5      | 5    | 12   | 5                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 17               | 20 | 14 | 11 | 6             | 7.5  | 6       | 6    | 67.3 | 37.0   | 41.0    | 41.0   | 6       | 12   | 55.5    | 6    | 12               | 38.5 | 6    | 7    | 6       | 6    | 63.5    | 160    | 172     | 184    | 6    | 6    | 51.0      | 5    | 12   | 5                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 18               | 21 | 15 | 11 | 6             | 7    | 6       | 6.5  | 67.4 | 42.0   | 42.0    | 42.0   | 6       | 12   | 55.0    | 6    | 12               | 38.5 | 6    | 7    | 6       | 6.5  | 63.4    | 161    | 173     | 185    | 7    | 7.5  | 54.5      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 19               | 22 | 15 | 11 | 6             | 6.5  | 6       | 6.5  | 65.3 | 43.0   | 43.0    | 43.0   | 6       | 13   | 54.5    | 6    | 13               | 38.0 | 6    | 7    | 6       | 7    | 61.1    | 162    | 174     | 186    | 7    | 7.5  | 54.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 20               | 23 | 15 | 11 | 6             | 6.5  | 6       | 6    | 65.3 | 44.0   | 44.0    | 44.0   | 6       | 12   | 54.0    | 6    | 12               | 38.0 | 6    | 7    | 6       | 6.5  | 61.3    | 163    | 175     | 187    | 7    | 7    | 54.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 21               | 24 | 16 | 11 | 6             | 6.5  | 6       | 6    | 65.8 | 45.0   | 45.0    | 45.0   | 6       | 12   | 53.0    | 6    | 12               | 37.0 | 6    | 6.5  | 6       | 7    | 61.4    | 164    | 176     | 188    | 7    | 7    | 54.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 22               | 25 | 16 | 11 | 6             | 6    | 7       | 7.5  | 70.8 | 46.0   | 46.0    | 46.0   | 7       | 15   | 57.5    | 7    | 15               | 41.0 | 6    | 6.5  | 6       | 6.5  | 61.6    | 165    | 177     | 189    | 7    | 6.5  | 54.0      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 23               | 26 | 17 | 11 | 6             | 6    | 6       | 6    | 66.4 | 47.0   | 47.0    | 47.0   | 7       | 15   | 56.5    | 7    | 15               | 40.0 | 6    | 6.5  | 6       | 7    | 61.9    | 166    | 178     | 190    | 7    | 6.5  | 54.5      | 5    | 12   | 6                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 23               | 27 | 17 | 11 | 7             | 7.5  | 7       | 7    | 71.3 | 47.0   | 47.0    | 47.0   | 7       | 15   | 56.5    | 7    | 15               | 41.0 | 6    | 6.5  | 6       | 6.5  | 62.0    | 167    | 179     | 191    | 7    | 6    | 54.5      | 5    | 12   | 6                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 24               | 28 | 18 | 11 | 7             | 7.5  | 7       | 7.5  | 71.8 | 48.0   | 48.0    | 48.0   | 7       | 14   | 55.5    | 7    | 14               | 40.0 | 6    | 6    | 6       | 6.5  | 62.4    | 168    | 180     | 192    | 7    | 6    | 54.5      | 5    | 12   | 6                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 25               | 29 | 19 | 11 | 7             | 7.5  | 7       | 7.5  | 72.4 | 49.0   | 49.0    | 49.0   | 7       | 14   | 55.0    | 7    | 14               | 39.0 | 6    | 6    | 6       | 6.5  | 62.6    | 169    | 181     | 193    | 8    | 7.5  | 60.5      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 26               | 30 | 19 | 11 | 7             | 7.5  | 7       | 7    | 72.5 | 50.0   | 50.0    | 50.0   | 7       | 13   | 54.5    | 7    | 13               | 38.0 | 6    | 6    | 6       | 6.5  | 62.9    | 170    | 182     | 194    | 8    | 7.5  | 60.5      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 27               | 31 | 20 | 11 | 7             | 7    | 7       | 7.5  | 73.0 | 51.0   | 51.0    | 51.0   | 7       | 14   | 54.0    | 7    | 14               | 38.0 | 6    | 6    | 6       | 6    | 63.3    | 171    | 183     | 195    | 8    | 7    | 60.5      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 28               | 32 | 20 | 11 | 7             | 7    | 7       | 6.5  | 73.1 | 52.0   | 52.0    | 52.0   | 7       | 14   | 53.5    | 7    | 14               | 38.0 | 6    | 6    | 6       | 6    | 63.5    | 172    | 184     | 196    | 8    | 7    | 60.5      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 28               | 32 | 21 | 11 | 7             | 6.5  | 7       | 6.5  | 73.6 | 52.0   | 52.0    | 52.0   | 7       | 14   | 53.5    | 7    | 14               | 37.5 | 7    | 7    | 6       | 6    | 63.5    | 172    | 184     | 196    | 8    | 7    | 60.5      | 5    | 12   | 6                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 28               | 33 | 22 | 11 | 7             | 6.5  | 7       | 6.5  | 74.1 | 52.0   | 52.0    | 52.0   | 7       | 13   | 53.5    | 7    | 13               | 37.5 | 7    | 7.5  | 6       | 6    | 63.9    | 173    | 185     | 197    | 8    | 7    | 60.5      | 5    | 12   | 6                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



GENERAL NOTES:

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

STATE OF MISSOURI  
DENNIS W. HECKMAN  
NUMBER PE-27141  
PROFESSIONAL ENGINEER

THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.

CONCRETE  
DOUBLE BOX CULVERT

MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS

SPAN (S): 11 FEET  
HEIGHT (HT): 12 THRU 14 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

703.47

SHEET NO.  
17 OF 27

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 12 FT |                     |    |    |    |               |      |         |      |      |       |         |       |         |      |         |      |                  |      |      |      |         |      |      |         |       |         | HEIGHT (HT) = 6 FT OR 7 FT OR 8 FT |      |           |      |      |      |      |    |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|---------|-------|---------|------|---------|------|------------------|------|------|------|---------|------|------|---------|-------|---------|------------------------------------|------|-----------|------|------|------|------|----|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |         |       |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |      |      |         |       |         |                                    |      | WALL BARS |      |      |      |      |    |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       | H1 BARS |       | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      |      | B1 BARS |       | B2 BARS |                                    |      |           |      |      |      |      |    |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |         |       | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | SIZE    | SPA. | C4   | K3      |       |         | SIZE                               | SPA. | C7        | SIZE | SPA. | SIZE | SPA. | G1 |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=6' | HT=7'   | HT=8' |         |      |         |      |                  |      |      |      |         |      |      | HT=6'   | HT=7' | HT=8'   |                                    |      |           |      |      |      |      |    |  |  |  |  |  |  |  |
| 1 FT             | 14                  | 10 | 8  | 8  | 5             | 6    | 4       | 6    | 56.1 | 30.0  | 30.0    | 30.0  | 5       | 12   | 115.0   | 5    | 12               | 31.5 | 5    | 7.5  | 5       | 6.5  | 52.4 | 78      | 90    | 102     | 6                                  | 6.5  | 56.5      | 5    | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 11 | 8  | 8  | 6             | 8    | 4       | 6.5  | 59.1 | 31.0  | 31.0    | 31.0  | 6       | 16   | 118.0   | 6    | 16               | 39.0 | 5    | 7.5  | 5       | 7.5  | 47.9 | 79      | 91    | 103     | 6                                  | 6.5  | 56.0      | 5    | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 4 FT             | 11                  | 10 | 8  | 8  | 5             | 6.5  | 5       | 7    | 43.6 | 31.0  | 31.0    | 31.0  | 6       | 15   | 77.5    | 6    | 15               | 36.5 | 5    | 6.5  | 5       | 6    | 42.6 | 78      | 90    | 102     | 7                                  | 6.5  | 58.5      | 5    | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 6 FT             | 11                  | 11 | 8  | 8  | 5             | 7    | 5       | 6.5  | 40.9 | 27.0  | 31.0    | 31.0  | 6       | 14   | 63.0    | 6    | 14               | 35.0 | 5    | 6.5  | 5       | 7    | 39.3 | 79      | 91    | 103     | 7                                  | 6.5  | 57.5      | 5    | 12   | 5    | 12   | 12 |  |  |  |  |  |  |  |
| 8 FT             | 11                  | 13 | 8  | 8  | 5             | 7    | 5       | 6    | 39.1 | 27.0  | 27.0    | 31.0  | 6       | 12   | 58.0    | 6    | 12               | 34.0 | 5    | 6    | 5       | 8.5  | 36.3 | 81      | 93    | 105     | 6                                  | 6    | 54.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 10 FT            | 12                  | 14 | 8  | 8  | 5             | 6.5  | 5       | 6.5  | 37.0 | 28.0  | 28.0    | 32.0  | 6       | 12   | 56.5    | 6    | 12               | 33.5 | 6    | 8    | 5       | 8.5  | 34.5 | 82      | 94    | 106     | 6                                  | 6    | 54.5      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 12 FT            | 14                  | 15 | 8  | 8  | 5             | 6    | 5       | 8    | 34.6 | 30.0  | 34.0    | 34.0  | 6       | 13   | 55.5    | 6    | 13               | 33.5 | 6    | 7.5  | 5       | 8.5  | 33.8 | 83      | 95    | 107     | 7                                  | 7    | 57.0      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 14 FT            | 15                  | 16 | 8  | 8  | 6             | 8    | 5       | 7.5  | 38.4 | 31.0  | 35.0    | 35.0  | 6       | 12   | 61.0    | 6    | 12               | 39.5 | 6    | 7.5  | 5       | 8    | 32.9 | 84      | 96    | 108     | 7                                  | 7    | 57.0      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 16 FT            | 16                  | 17 | 8  | 8  | 6             | 8    | 5       | 7    | 37.5 | 32.0  | 36.0    | 36.0  | 7       | 16   | 65.5    | 7    | 16               | 44.5 | 6    | 7    | 5       | 7    | 32.3 | 85      | 97    | 109     | 7                                  | 6.5  | 57.0      | 5    | 12   | 5    | 12   | 0  |  |  |  |  |  |  |  |
| 18 FT            | 17                  | 19 | 8  | 8  | 6             | 7.5  | 5       | 6.5  | 37.0 | 37.0  | 37.0    | 37.0  | 7       | 15   | 65.0    | 7    | 15               | 44.0 | 6    | 7    | 5       | 6.5  | 31.6 | 87      | 99    | 111     | 7                                  | 7    | 57.0      | 5    | 12   | 5    | 10.5 | 0  |  |  |  |  |  |  |  |
| 20 FT            | 18                  | 20 | 8  | 8  | 6             | 7    | 5       | 6.5  | 36.4 | 38.0  | 38.0    | 38.0  | 7       | 15   | 64.5    | 7    | 15               | 44.0 | 6    | 6.5  | 5       | 6    | 31.3 | 88      | 100   | 112     | 7                                  | 7    | 57.0      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |
| 22 FT            | 19                  | 21 | 8  | 8  | 6             | 6    | 5       | 6    | 36.0 | 39.0  | 39.0    | 39.0  | 7       | 14   | 64.0    | 7    | 14               | 44.0 | 6    | 6.5  | 6       | 7.5  | 34.1 | 89      | 101   | 113     | 7                                  | 7    | 57.0      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |
| 24 FT            | 21                  | 22 | 8  | 8  | 6             | 6    | 6       | 7    | 39.6 | 45.0  | 45.0    | 45.0  | 7       | 15   | 63.5    | 7    | 15               | 44.0 | 6    | 6.5  | 6       | 7    | 34.4 | 90      | 102   | 114     | 7                                  | 7    | 56.5      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |
| 26 FT            | 21                  | 23 | 8  | 8  | 6             | 6    | 6       | 7    | 38.3 | 45.0  | 45.0    | 45.0  | 7       | 14   | 63.0    | 7    | 14               | 43.5 | 6    | 6.5  | 6       | 6.5  | 32.8 | 91      | 103   | 115     | 7                                  | 7    | 56.5      | 5    | 12   | 5    | 9.5  | 0  |  |  |  |  |  |  |  |
| 28 FT            | 23                  | 24 | 8  | 8  | 6             | 6    | 6       | 6    | 38.3 | 47.0  | 47.0    | 47.0  | 7       | 15   | 62.0    | 7    | 15               | 43.0 | 6    | 6    | 6       | 6    | 33.0 | 92      | 104   | 116     | 7                                  | 7    | 56.5      | 5    | 12   | 5    | 9    | 0  |  |  |  |  |  |  |  |
| 30 FT            | 23                  | 25 | 8  | 8  | 7             | 7    | 6       | 6    | 38.3 | 47.0  | 47.0    | 47.0  | 7       | 14   | 62.0    | 7    | 14               | 43.5 | 6    | 6    | 6       | 6    | 33.0 | 93      | 105   | 117     | 7                                  | 6.5  | 56.5      | 5    | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |
| 32 FT            | 25                  | 27 | 9  | 8  | 7             | 7.5  | 6       | 6.5  | 39.1 | 49.0  | 49.0    | 49.0  | 7       | 14   | 61.0    | 7    | 14               | 41.5 | 6    | 6    | 6       | 6.5  | 33.8 | 95      | 107   | 119     | 7                                  | 6    | 56.5      | 5    | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |
| 34 FT            | 25                  | 28 | 9  | 8  | 7             | 6.5  | 6       | 6.5  | 39.3 | 49.0  | 49.0    | 49.0  | 7       | 13   | 61.0    | 7    | 13               | 42.5 | 6    | 6    | 6       | 6    | 33.8 | 96      | 108   | 120     | 7                                  | 6    | 56.5      | 5    | 12   | 5    | 8.5  | 0  |  |  |  |  |  |  |  |
| 36 FT            | 26                  | 29 | 9  | 8  | 7             | 6.5  | 6       | 6.5  | 39.3 | 50.0  | 50.0    | 50.0  | 7       | 13   | 60.0    | 7    | 13               | 41.5 | 6    | 6    | 6       | 6    | 33.9 | 97      | 109   | 121     | 8                                  | 7.5  | 62.5      | 5    | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |
| 38 FT            | 27                  | 30 | 10 | 8  | 7             | 6.5  | 6       | 7    | 40.1 | 51.0  | 51.0    | 51.0  | 7       | 13   | 59.0    | 7    | 13               | 41.0 | 6    | 6    | 6       | 6.5  | 34.5 | 98      | 110   | 122     | 8                                  | 7.5  | 62.5      | 5    | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |
| 40 FT            | 28                  | 31 | 10 | 8  | 7             | 6.5  | 6       | 6.5  | 40.1 | 52.0  | 52.0    | 52.0  | 7       | 12   | 58.5    | 7    | 12               | 40.0 | 7    | 8    | 6       | 6    | 34.6 | 99      | 111   | 123     | 8                                  | 7    | 62.5      | 5    | 12   | 5    | 8    | 0  |  |  |  |  |  |  |  |
| 42 FT            | 29                  | 32 | 10 | 8  | 7             | 6.5  | 6       | 6.5  | 40.1 | 53.0  | 53.0    | 53.0  | 7       | 12   | 57.5    | 7    | 12               | 39.0 | 7    | 8    | 6       | 6    | 34.9 | 100     | 112   | 124     | 8                                  | 7    | 62.5      | 5    | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |
| 44 FT            | 30                  | 33 | 10 | 8  | 7             | 6.5  | 6       | 6    | 40.3 | 54.0  | 54.0    | 54.0  | 7       | 12   | 56.5    | 7    | 12               | 38.5 | 7    | 7.5  | 7       | 6.5  | 38.1 | 101     | 113   | 125     | 8                                  | 6.5  | 62.0      | 5    | 12   | 5    | 7    | 0  |  |  |  |  |  |  |  |
| 46 FT            | 31                  | 34 | 10 | 8  | 7             | 6    | 6       | 6    | 40.3 | 55.0  | 55.0    | 55.0  | 8       | 15   | 64.0    | 8    | 15               | 45.5 | 7    | 7.5  | 7       | 6.5  | 38.3 | 102     | 114   | 126     | 8                                  | 6.5  | 62.0      | 5    | 12   | 5    | 6.5  | 0  |  |  |  |  |  |  |  |
| 48 FT            | 31                  | 34 | 11 | 8  | 7             | 6    | 6       | 6.5  | 41.0 | 55.0  | 55.0    | 55.0  | 8       | 15   | 64.0    | 8    | 15               | 46.0 | 7    | 6.5  | 6       | 6    | 35.6 | 102     | 114   | 126     | 8                                  | 6.5  | 62.5      | 5    | 12   | 5    | 7.5  | 0  |  |  |  |  |  |  |  |
| 50 FT            | 32                  | 35 | 11 | 8  | 8             | 7.5  | 6       | 6.5  | 41.0 | 56.0  | 56.0    | 56.0  | 8       | 15   | 63.5    | 8    | 15               | 45.5 | 7    | 7    | 6       | 6    | 35.8 | 103     | 115   | 127     | 8                                  | 6.5  | 62.0      | 5    | 12   | 5    | 7    | 0  |  |  |  |  |  |  |  |

| SPAN (S) = 12 FT |                     |    |    |    |               |      |         |      |      |       |        |        |         |      |         |      |                  |      |         |      |    |       |        |        |         |      |    |      |           |      |      |    | HEIGHT (HT) = 9 FT OR 10 FT OR 11 FT |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|--------|--------|---------|------|---------|------|------------------|------|---------|------|----|-------|--------|--------|---------|------|----|------|-----------|------|------|----|--------------------------------------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |        |        |         |      |         |      | BOTTOM SLAB BARS |      |         |      |    |       |        |        |         |      |    |      | WALL BARS |      |      |    |                                      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |        |        | H1 BARS |      | H2 BARS |      | A2 BARS          |      | J4 BARS |      |    |       |        |        | H3 BARS |      |    |      |           |      |      |    |                                      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |        |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE    | SPA. | C4 | K3    |        |        | SIZE    | SPA. | C7 | SIZE | SPA.      | SIZE | SPA. | G1 |                                      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=9' | HT=10' | HT=11' |         |      |         |      |                  |      |         |      |    | HT=9' | HT=10' | HT=11' |         |      |    |      |           |      |      |    |                                      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14                  | 11 | 8  | 9  | 5             | 6    | 5       | 8    | 58.3 | 34.0  | 34.0   | 34.0   | 5       | 12   | 117.5   | 5    | 12               | 32.0 | 5       | 7.5  | 6  | 6.5   | 77.5   | 115    | 127     | 139  | 6  | 7    | 57.0      | 5    | 12   | 5  | 10                                   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 12 | 8  | 9  | 6             | 8    | 5       | 8    | 62.3 | 35.0  | 35.0   | 35.0   | 6       | 16   | 121.5   | 6    | 16               | 39.5 | 5       | 7.5  | 6  | 7     | 71.9   | 116    | 128     | 140  | 6  | 7    | 56.5      | 5    | 12   | 5  | 10                                   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 11                  | 11 | 9  | 9  | 5             | 6.5  | 6       | 7    | 76.1 | 31.0  | 31.0   | 35.0   | 6       | 15   | 86.0    | 6    | 15               | 37.0 | 5       | 6.5  | 6  | 7     | 61.8   | 115    | 127     | 139  | 6  | 6    | 56.0      | 5    | 11.5 | 5  | 10.5                                 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 11                  | 12 | 9  | 9  | 5             | 7    | 6       | 7    | 59.0 | 31.0  | 31.0   | 35.0   | 6       | 14   | 63.0    | 6    | 14               | 35.5 | 5       | 6    | 6  | 7     | 57.6   | 116    | 128     | 140  | 6  | 6    | 55.0      | 5    | 12   | 5  | 10                                   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 11                  | 13 | 9  | 9  | 5             | 7    | 6       | 7    | 54.0 | 31.0  | 31.0   | 35.0   | 6       | 13   | 58.0    | 6    | 13               | 34.5 | 5       | 6    | 6  | 7     | 54.5   | 117    | 129     | 141  | 6  | 6    | 55.0      | 5    | 12   | 5  | 9.5                                  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 12                  | 14 | 10 | 9  | 5             | 7    | 5       | 6    | 49.0 | 32.0  | 32.0   | 32.0   | 6       | 12   | 56.0    | 6    | 12               | 34.0 | 6       | 8    | 5  | 6.5   | 49.3   | 118    | 130     | 142  | 7  | 7    | 57.5      | 5    | 12   | 5  | 10                                   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 13                  | 15 | 10 | 9  | 5             | 6.5  | 6       | 7.5  | 50.1 | 33.0  | 33.0   | 33.0   | 6       | 12   | 55.0    | 6    | 12               | 33.5 | 6       | 7.5  | 5  | 6.5   | 47.6   | 119    | 131     | 143  | 7  | 7    | 57.5      | 5    | 12   | 5  | 9                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 15                  | 16 | 10 | 9  | 6             | 8    | 5       | 6    | 50.6 | 35.0  | 35.0   | 35.0   | 6       | 12   | 60.5    | 6    | 12               | 39.5 | 6       | 7    | 5  | 6     | 46.4   | 120    | 132     | 144  | 7  | 7    | 57.0      | 5    | 12   | 5  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 16                  | 17 | 10 | 9  | 6             | 8    | 6       | 7.5  | 53.8 | 36.0  | 36.0   | 36.0   | 6       | 12   | 60.0    | 6    | 12               | 39.5 | 6       | 6.5  | 5  | 6     | 45.4   | 121    | 133     | 145  | 7  | 6.5  | 57.0      | 5    | 12   | 5  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 17                  | 19 | 10 | 9  | 6             | 7.5  | 6       | 7    | 53.1 | 37.0  | 37.0   | 41.0   | 7       | 16   | 64.5    | 7    | 16               | 44.5 | 6       | 7    | 6  | 7.5   | 47.8   | 123    | 135     | 147  | 7  | 7    | 57.0      | 5    | 12   | 5  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 18                  | 20 | 11 | 9  | 6             | 7    | 6       | 7.5  | 53.1 | 38.0  | 38.0   | 38.0   | 7       | 15   | 64.0    | 7    | 15               | 44.0 | 6       | 6.5  | 5  | 6     | 44.6   | 124    | 136     | 148  | 7  | 7    | 57.0      | 5    | 12   | 5  | 7.5                                  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 19                  | 21 | 12 | 9  | 6             | 6.5  | 6       | 7.5  | 53.5 | 39.0  | 39.0   | 39.0   | 7       | 15   | 63.5    | 7    | 15               | 44.0 | 6       | 6.5  | 5  | 6.5   | 44.8   | 125    | 137     | 149  | 7  | 7    | 57.0      | 5    | 12   | 5  | 7.5                                  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 20                  | 23 | 12 | 9  | 6             | 6.5  | 6       | 7    | 53.4 | 40.0  | 40.0   | 40.0   | 7       | 15   | 63.0    | 7    | 15               | 44.0 | 6       | 6.5  | 5  | 6.5   | 44.6   | 127    | 139     | 151  | 7  | 7    | 57.0      | 5    | 12   | 5  | 7                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 21                  | 23 | 12 | 9  | 6             | 6    | 6       | 7.5  | 51.4 | 41.0  | 41.0   | 41.0   | 7       | 15   | 62.0    | 7    | 15               | 43.5 | 6       | 6    | 5  | 6.5   | 42.8   | 127    | 139     | 151  | 7  | 7    | 57.0      | 5    | 12   | 5  | 7                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 22                  | 25 | 12 | 9  | 6             | 6    | 6       | 7    | 51.4 | 42.0  | 42.0   | 42.0   | 7       | 15   | 61.5    | 7    | 15               | 43.5 | 6       | 6.5  | 5  | 6.5   | 42.9   | 129    | 141     | 153  | 7  | 6.5  | 57.0      | 5    | 12   | 5  | 7                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 23                  | 26 | 12 | 9  | 7             | 7.5  | 6       | 6.5  | 51.3 | 43.0  | 43.0   | 43.0   | 7       | 15   | 61.0    | 7    | 15               | 43.5 | 6       | 6    | 5  | 6     | 43.0   | 130    | 142     | 154  | 7  | 6.5  | 57.0      | 5    | 12   | 5  | 7                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 24                  | 27 | 13 | 9  | 7             | 7.5  | 6       | 7    | 52.0 | 44.0  | 44.0   | 44.0   | 7       | 14   | 60.5    | 7    | 14               | 42.5 | 6       | 6    | 5  | 6     | 43.4   | 131    | 143     | 155  | 7  | 6    | 57.0      | 5    | 12   | 5  | 6.5                                  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 25                  | 28 | 13 | 9  | 7             | 7    | 6       | 7    | 52.0 | 45.0  | 45.0   | 45.0   | 7       | 14   | 59.5    | 7    | 14               | 41.5 | 6       | 6    | 5  | 6     | 43.5   | 132    | 144     | 156  | 7  | 6    | 57.0      | 5    | 12   | 5  | 6.5                                  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 26                  | 29 | 13 | 9  | 7             | 7    | 6       | 6    | 51.9 | 46.0  | 50.0   | 50.0   | 7       | 13   | 58.5    | 7    | 13               | 41.0 | 6       | 6    | 6  | 8.5   | 46.6   | 133    | 145     | 157  | 8  | 7.5  | 63.0      | 5    | 12   | 5  | 6.5                                  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 27                  | 30 | 14 | 9  | 7             | 7    | 6       | 6.5  | 52.6 | 47.0  | 51.0   | 51.0   | 7       | 13   | 57.5    | 7    | 13               | 40.0 | 7       | 8    | 6  | 8     | 47.1   | 134    | 146     | 158  | 8  | 7.5  | 63.0      | 5    | 12   | 5  | 6                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 28                  | 31 | 14 | 9  | 7             | 6.5  | 6       | 6.5  | 52.6 | 52.0  | 52.0   | 52.0   | 7       | 12   | 56.5    | 7    | 12               | 39.0 | 7       | 7.5  | 6  | 7.5   | 47.3   | 135    | 147     | 159  | 8  | 7    | 63.0      | 5    | 12   | 5  | 6                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 28                  | 32 | 15 | 9  | 7             | 6    | 6       | 6.5  | 53.5 | 52.0  | 52.0   | 52.0   | 7       | 12   | 56.5    | 7    | 12               | 39.5 | 7       | 7.5  | 6  | 7.5   | 47.5   | 136    | 148     | 160  | 8  | 7    | 63.0      | 5    | 12   | 6  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 29                  | 33 | 15 | 9  | 7             | 6    | 6       | 6.5  | 53.4 | 53.0  | 53.0   | 53.0   | 7       | 12   | 56.0    | 7    | 12               | 38.5 | 7       | 7.5  | 6  | 7     | 47.8   | 137    | 149     | 161  | 8  | 6.5  | 63.0      | 5    | 12   | 6  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 30                  | 34 | 15 | 9  | 7             | 6    | 6       | 6    | 53.4 | 54.0  | 54.0   | 54.0   | 7       | 12   | 55.5    | 7    | 12               | 38.0 | 7       | 7.5  | 6  | 7     | 47.9   | 138    | 150     | 162  | 8  | 6.5  | 63.0      | 5    | 12   | 6  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 31                  | 35 | 16 | 9  | 7             | 6    | 6       | 6.5  | 54.1 | 55.0  | 55.0   | 55.0   | 7       | 12   | 55.0    | 7    | 12               | 37.5 | 7       | 7    | 6  | 6.5   | 48.4   | 139    | 151     | 163  | 8  | 6.5  | 63.0      | 5    | 12   | 6  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 31                  | 36 | 16 | 9  | 8             | 7.5  | 6       | 6    | 54.3 | 55.0  | 55.0   | 55.0   | 7       | 12   | 55.0    | 7    | 12               | 37.5 | 7       | 7    | 6  | 6.5   | 48.4   | 140    | 152     | 164  | 8  | 6.5  | 63.0      | 5    | 12   | 6  | 8                                    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 12 FT |                     |    |    |    |               |      |         |      |      |        |         |      |         |       |         |      |                  |      |      |    |         |        |         |      |         | HEIGHT (HT) = 12 FT OR 13 FT |      |      |           |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|--------|---------|------|---------|-------|---------|------|------------------|------|------|----|---------|--------|---------|------|---------|------------------------------|------|------|-----------|----|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |      |         |       |         |      | BOTTOM SLAB BARS |      |      |    |         |        |         |      |         |                              |      |      | WALL BARS |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |      | H2 BARS |       | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |        | B1 BARS |      | B2 BARS |                              |      |      |           |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | T1 | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         | SIZE | SPA.    | C5    | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | K3      |        | SIZE    | SPA. | C7      | SIZE                         | SPA. | SIZE | SPA.      | G1 |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=12' | HT=13'  |      |         |       |         |      |                  |      |      |    | HT=12'  | HT=13' |         |      |         |                              |      |      |           |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14                  | 11 | 9  | 10 | 5             | 6    | 5       | 6.5  | 59.0 | 34.0   | 34.0    | 5    | 12      | 118.0 | 5       | 12   | 32.5             | 5    | 7    | 6  | 6       | 88.9   | 151     | 163  | 6       | 6.5                          | 57.5 | 5    | 12        | 5  | 8.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 12 | 9  | 10 | 6             | 8    | 5       | 7    | 63.0 | 35.0   | 35.0    | 6    | 16      | 122.0 | 6       | 16   | 39.5             | 5    | 7    | 6  | 6       | 83.6   | 152     | 164  | 6       | 7                            | 57.0 | 5    | 12        | 5  | 8.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 11                  | 12 | 9  | 10 | 5             | 6.5  | 6       | 7    | 61.0 | 35.0   | 35.0    | 6    | 15      | 120.0 | 6       | 15   | 37.0             | 5    | 6.5  | 6  | 6       | 76.5   | 152     | 164  | 6       | 6.5                          | 56.5 | 5    | 12        | 5  | 8.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 11                  | 12 | 9  | 10 | 5             | 7    | 6       | 6.5  | 73.5 | 35.0   | 35.0    | 6    | 14      | 63.5  | 6       | 14   | 35.5             | 5    | 6    | 6  | 6       | 70.0   | 152     | 164  | 6       | 6                            | 55.5 | 5    | 12        | 5  | 8.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 11                  | 13 | 10 | 10 | 5             | 7    | 6       | 7    | 63.9 | 31.0   | 35.0    | 6    | 13      | 58.0  | 6       | 13   | 34.5             | 5    | 6    | 6  | 6.5     | 65.8   | 153     | 165  | 6       | 6                            | 55.0 | 5    | 12        | 5  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 12                  | 14 | 10 | 10 | 5             | 7    | 6       | 7    | 61.6 | 36.0   | 36.0    | 6    | 12      | 56.5  | 6       | 12   | 34.5             | 6    | 8    | 6  | 6       | 63.1   | 154     | 166  | 7       | 7                            | 57.5 | 5    | 12        | 5  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 13                  | 15 | 11 | 10 | 5             | 6.5  | 6       | 7.5  | 59.9 | 33.0   | 37.0    | 6    | 12      | 55.0  | 6       | 12   | 34.0             | 6    | 7.5  | 6  | 6.5     | 61.4   | 155     | 167  | 7       | 7                            | 57.5 | 5    | 12        | 5  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 14                  | 16 | 12 | 10 | 5             | 6    | 6       | 7.5  | 58.8 | 34.0   | 38.0    | 6    | 12      | 54.5  | 6       | 12   | 34.0             | 6    | 7    | 6  | 7.5     | 60.0   | 156     | 168  | 7       | 7                            | 57.5 | 5    | 12        | 5  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 16                  | 18 | 12 | 10 | 6             | 8    | 6       | 7    | 64.1 | 36.0   | 40.0    | 6    | 12      | 60.0  | 6       | 12   | 40.0             | 6    | 7    | 6  | 7.5     | 59.5   | 158     | 170  | 6       | 6                            | 54.0 | 5    | 12        | 5  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 17                  | 19 | 12 | 10 | 6             | 7.5  | 6       | 6.5  | 63.1 | 37.0   | 41.0    | 6    | 12      | 59.5  | 6       | 12   | 39.5             | 6    | 7    | 6  | 6.5     | 58.5   | 159     | 171  | 7       | 7                            | 57.0 | 5    | 12        | 5  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 18                  | 20 | 13 | 10 | 6             | 7    | 6       | 6.5  | 62.6 | 38.0   | 42.0    | 6    | 12      | 58.5  | 6       | 12   | 39.5             | 6    | 6.5  | 6  | 7.5     | 57.9   | 160     | 172  | 7       | 7                            | 57.0 | 5    | 12        | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 19                  | 21 | 13 | 10 | 6             | 6.5  | 6       | 6.5  | 62.3 | 39.0   | 43.0    | 7    | 16      | 63.0  | 7       | 16   | 44.5             | 6    | 6    | 6  | 6.5     | 57.5   | 161     | 173  | 7       | 7                            | 57.0 | 5    | 12        | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 20                  | 23 | 14 | 10 | 6             | 6.5  | 6       | 6.5  | 62.5 | 40.0   | 44.0    | 7    | 16      | 62.5  | 7       | 16   | 44.0             | 6    | 6.5  | 6  | 7.5     | 57.8   | 163     | 175  | 7       | 7                            | 57.0 | 5    | 12        | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 21                  | 24 | 14 | 10 | 6             | 6    | 6       | 6    | 62.3 | 41.0   | 45.0    | 7    | 15      | 62.0  | 7       | 15   | 44.0             | 6    | 6.5  | 6  | 7       | 57.6   | 164     | 176  | 7       | 7                            | 57.0 | 5    | 12        | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 22                  | 25 | 14 | 10 | 6             | 6    | 6       | 6    | 59.8 | 42.0   | 46.0    | 7    | 15      | 61.0  | 7       | 15   | 43.5             | 6    | 6.5  | 6  | 7.5     | 55.1   | 165     | 177  | 7       | 6.5                          | 57.0 | 5    | 12        | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 23                  | 26 | 15 | 10 | 7             | 8    | 6       | 6    | 60.3 | 47.0   | 47.0    | 7    | 15      | 60.0  | 7       | 15   | 42.5             | 6    | 6    | 6  | 7.5     | 55.4   | 166     | 178  | 7       | 6.5                          | 57.0 | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 24                  | 27 | 15 | 10 | 7             | 7.5  | 6       | 6    | 60.3 | 48.0   | 48.0    | 7    | 14      | 59.5  | 7       | 14   | 42.0             | 6    | 6    | 6  | 7.5     | 55.5   | 167     | 179  | 7       | 6                            | 57.0 | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 25                  | 28 | 16 | 10 | 7             | 7.5  | 6       | 6    | 60.9 | 49.0   | 49.0    | 7    | 14      | 58.5  | 7       | 14   | 41.0             | 6    | 6    | 6  | 7.5     | 55.8   | 168     | 180  | 7       | 6                            | 57.0 | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 25                  | 29 | 16 | 10 | 7             | 6.5  | 7       | 7.5  | 65.8 | 49.0   | 49.0    | 7    | 13      | 58.5  | 7       | 13   | 41.5             | 6    | 6    | 6  | 7.5     | 55.8   | 169     | 181  | 8       | 7.5                          | 63.0 | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 26                  | 30 | 17 | 10 | 7             | 7    | 6       | 6    | 61.5 | 50.0   | 50.0    | 7    | 13      | 57.5  | 7       | 13   | 40.5             | 7    | 7.5  | 6  | 7       | 56.1   | 170     | 182  | 8       | 7.5                          | 63.0 | 5    | 12        | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 27                  | 31 | 17 | 10 | 7             | 6.5  | 7       | 7.5  | 66.5 | 51.0   | 51.0    | 7    | 13      | 57.0  | 7       | 13   | 40.0             | 7    | 7.5  | 6  | 7       | 56.3   | 171     | 183  | 8       | 7                            | 63.0 | 5    | 12        | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 28                  | 32 | 18 | 10 | 7             | 6.5  | 7       | 7.5  | 67.1 | 52.0   | 52.0    | 7    | 12      | 56.5  | 7       | 12   | 39.0             | 7    | 7.5  | 6  | 6.5     | 56.6   | 172     | 184  | 8       | 7                            | 63.0 | 5    | 12        | 6  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 29                  | 33 | 18 | 10 | 7             | 6.5  | 7       | 7    | 67.1 | 53.0   | 53.0    | 7    | 12      | 56.0  | 7       | 12   | 38.0             | 7    | 7.5  | 6  | 6.5     | 56.9   | 173     | 185  | 8       | 6.5                          | 63.0 | 5    | 12        | 6  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 29                  | 34 | 19 | 10 | 7             | 6    | 7       | 7.5  | 67.9 | 53.0   | 53.0    | 7    | 12      | 56.0  | 7       | 12   | 38.5             | 7    | 7.5  | 6  | 6.5     | 57.0   | 174     | 186  | 8       | 6.5                          | 63.0 | 5    | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 30                  | 35 | 19 | 10 | 7             | 6    | 7       | 6.5  | 67.9 | 54.0   | 54.0    | 7    | 12      | 55.0  | 7       | 12   | 38.0             | 7    | 7    | 6  | 6.5     | 57.3   | 175     | 187  | 8       | 6.5                          | 63.0 | 5    | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 31                  | 36 | 20 | 10 | 7             | 6    | 7       | 7    | 68.6 | 55.0   | 55.0    | 7    | 13      | 54.5  | 7       | 13   | 37.5             | 7    | 7    | 6  | 6.5     | 57.6   | 176     | 188  | 8       | 6                            | 63.0 | 5    | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 12 FT |                     |    |    |    |               |      |         |      |      |        |         |      |         |       |         |      |                  |      |      |      |         |      |         |        |         |      |      | HEIGHT (HT) = 14 FT OR 15 FT |           |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|--------|---------|------|---------|-------|---------|------|------------------|------|------|------|---------|------|---------|--------|---------|------|------|------------------------------|-----------|------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |      |         |       |         |      | BOTTOM SLAB BARS |      |      |      |         |      |         |        |         |      |      |                              | WALL BARS |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |      | H2 BARS |       | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      | B1 BARS |        | B2 BARS |      |      |                              |           |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         | SIZE | SPA.    | C5    | SIZE    | SPA. | C6               | SIZE | SPA. | SIZE | SPA.    | C4   | K3      |        | SIZE    | SPA. | C7   | SIZE                         | SPA.      | SIZE | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=14' | HT=15'  |      |         |       |         |      |                  |      |      |      |         |      | HT=14'  | HT=15' |         |      |      |                              |           |      |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14                  | 12 | 10 | 12 | 5             | 6    | 5       | 6    | 60.0 | 34.0   | 34.0    | 5    | 12      | 119.0 | 5       | 12   | 32.5             | 5    | 7    | 6    | 6       | 98.8 | 176     | 188    | 6       | 7    | 58.0 | 5                            | 12        | 5    | 8    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 12 | 10 | 12 | 6             | 8    | 6       | 8    | 67.0 | 35.0   | 39.0    | 6    | 16      | 126.0 | 6       | 16   | 40.0             | 5    | 6.5  | 6    | 6       | 92.5 | 176     | 188    | 6       | 6.5  | 57.0 | 5                            | 12        | 5    | 8    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 11                  | 13 | 10 | 12 | 5             | 6.5  | 6       | 6.5  | 62.0 | 35.0   | 35.0    | 6    | 16      | 121.0 | 6       | 16   | 37.5             | 5    | 6.5  | 6    | 6       | 89.8 | 177     | 189    | 6       | 7    | 57.0 | 5                            | 12        | 5    | 7    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 11                  | 13 | 11 | 12 | 5             | 7    | 6       | 7    | 83.8 | 31.0   | 35.0    | 6    | 15      | 61.0  | 6       | 15   | 36.0             | 5    | 6    | 6    | 6.5     | 81.4 | 177     | 189    | 6       | 6.5  | 56.0 | 5                            | 12        | 5    | 7    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 11                  | 13 | 12 | 12 | 5             | 7    | 6       | 7.5  | 73.9 | 35.0   | 35.0    | 6    | 13      | 57.5  | 6       | 13   | 35.0             | 5    | 6    | 6    | 6.5     | 76.1 | 177     | 189    | 7       | 7    | 58.0 | 5                            | 12        | 5    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 12                  | 14 | 12 | 12 | 5             | 7    | 6       | 7    | 71.4 | 36.0   | 36.0    | 6    | 13      | 56.0  | 6       | 13   | 35.0             | 6    | 8    | 6    | 6.5     | 74.1 | 178     | 190    | 7       | 7    | 58.0 | 5                            | 12        | 5    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 13                  | 15 | 13 | 12 | 5             | 6.5  | 6       | 7.5  | 68.8 | 37.0   | 37.0    | 6    | 13      | 55.0  | 6       | 13   | 34.5             | 6    | 7.5  | 6    | 6.5     | 71.6 | 179     | 191    | 7       | 7    | 57.5 | 5                            | 12        | 5    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 14                  | 16 | 13 | 12 | 5             | 6    | 6       | 6.5  | 67.3 | 38.0   | 38.0    | 6    | 12      | 54.5  | 6       | 12   | 34.5             | 6    | 6.5  | 6    | 6       | 70.1 | 180     | 192    | 7       | 7    | 57.5 | 5                            | 12        | 5    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 15                  | 18 | 14 | 12 | 6             | 8    | 6       | 6.5  | 72.1 | 39.0   | 39.0    | 6    | 12      | 60.0  | 6       | 12   | 40.5             | 6    | 7    | 6    | 6.5     | 69.5 | 182     | 194    | 6       | 6    | 54.5 | 5                            | 12        | 5    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 17                  | 19 | 14 | 12 | 6             | 7.5  | 6       | 6    | 72.1 | 41.0   | 41.0    | 6    | 12      | 59.5  | 6       | 12   | 40.5             | 6    | 6.5  | 6    | 6       | 68.1 | 183     | 195    | 6       | 6    | 54.5 | 5                            | 12        | 5    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 18                  | 20 | 15 | 12 | 6             | 7    | 6       | 6    | 71.5 | 42.0   | 42.0    | 6    | 12      | 59.0  | 6       | 12   | 40.0             | 6    | 6.5  | 6    | 6       | 67.1 | 184     | 196    | 7       | 7    | 57.5 | 5                            | 12        | 6    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 19                  | 22 | 16 | 12 | 6             | 6.5  | 6       | 6    | 71.4 | 43.0   | 43.0    | 6    | 12      | 58.5  | 6       | 12   | 40.0             | 6    | 6.5  | 6    | 6       | 67.4 | 186     | 198    | 7       | 7    | 57.5 | 5                            | 12        | 6    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 20                  | 23 | 16 | 12 | 6             | 6.5  | 6       | 6    | 71.3 | 44.0   | 44.0    | 6    | 12      | 58.0  | 6       | 12   | 40.0             | 6    | 6.5  | 6    | 6       | 67.1 | 187     | 199    | 7       | 7    | 57.5 | 5                            | 12        | 6    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 21                  | 24 | 17 | 12 | 6             | 6    | 6       | 6    | 71.4 | 45.0   | 45.0    | 6    | 12      | 57.0  | 6       | 12   | 39.5             | 6    | 6    | 6    | 6       | 67.1 | 188     | 200    | 7       | 7    | 57.5 | 5                            | 12        | 6    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 22                  | 25 | 17 | 12 | 6             | 6    | 6       | 6    | 69.1 | 46.0   | 46.0    | 7    | 15      | 61.5  | 7       | 15   | 44.0             | 6    | 6    | 6    | 6.5     | 64.9 | 189     | 201    | 7       | 6.5  | 57.5 | 5                            | 12        | 6    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 23                  | 26 | 17 | 12 | 6             | 6    | 7       | 7.5  | 74.1 | 47.0   | 47.0    | 7    | 15      | 61.0  | 7       | 15   | 43.0             | 6    | 6    | 6    | 6.5     | 64.9 | 190     | 202    | 7       | 6.5  | 57.5 | 5                            | 12        | 6    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 23                  | 27 | 17 | 12 | 7             | 7    | 7       | 6.5  | 74.0 | 47.0   | 47.0    | 7    | 14      | 61.0  | 7       | 14   | 44.0             | 6    | 6    | 6    | 6       | 65.0 | 191     | 203    | 7       | 6    | 57.5 | 5                            | 12        | 6    | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 24                  | 28 | 18 | 12 | 7             | 7    | 7       | 7    | 74.5 | 48.0   | 48.0    | 7    | 14      | 60.0  | 7       | 14   | 43.0             | 6    | 6    | 6    | 6       | 65.3 | 192     | 204    | 7       | 6    | 57.5 | 5                            | 12        | 6    | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 25                  | 29 | 19 | 12 | 7             | 7    | 7       | 7    | 75.0 | 49.0   | 49.0    | 7    | 14      | 59.0  | 7       | 14   | 42.0             | 7    | 7.5  | 6    | 6.5     | 65.5 | 193     | 205    | 8       | 7.5  | 63.5 | 5                            | 12        | 6    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 26                  | 30 | 20 | 12 | 7             | 7    | 7       | 7.5  | 75.5 | 50.0   | 50.0    | 7    | 13      | 58.0  | 7       | 13   | 41.5             | 7    | 7.5  | 6    | 6       | 65.9 | 194     | 206    | 8       | 7.5  | 63.5 | 5                            | 12        | 6    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 27                  | 31 | 20 | 12 | 7             | 7    | 7       | 6.5  | 75.6 | 51.0   | 51.0    | 7    | 13      | 57.5  | 7       | 13   | 40.5             | 7    | 7.5  | 6    | 6       | 66.0 | 195     | 207    | 8       | 7    | 63.5 | 5                            | 12        | 6    | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 28                  | 32 | 21 | 12 | 7             | 6.5  | 7       | 7    | 76.3 | 52.0   | 52.0    | 7    | 12      | 57.0  | 7       | 12   | 39.5             | 7    | 7    | 6    | 6       | 66.4 | 196     | 208    | 8       | 7    | 63.5 | 5                            | 12        | 6    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 28                  | 33 | 22 | 12 | 7             | 6.5  | 7       | 7    | 76.6 | 52.0   | 58.0    | 7    | 12      | 57.0  | 7       | 12   | 40.0             | 7    | 7    | 7    | 7.5     | 69.6 | 197     | 209    | 8       | 6.5  | 63.5 | 5                            | 12        | 6    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 29                  | 34 | 22 | 12 | 7             | 6.5  | 7       | 6    | 76.8 | 53.0   | 59.0    | 7    | 12      | 56.5  | 7       | 12   | 39.0             | 7    | 7    | 7    | 7.5     | 69.9 | 198     | 210    | 8       | 6.5  | 63.5 | 5                            | 12        | 6    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 30                  | 35 | 24 | 12 | 7             | 6    | 7       | 7    | 78.0 | 54.0   | 60.0    | 7    | 12      | 56.0  | 7       | 12   | 39.0             | 7    | 7    | 7    | 7.5     | 70.4 | 199     | 211    | 8       | 6.5  | 64.0 | 5                            | 12        | 6    | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 30                  | 36 | 24 | 12 | 7             | 6    | 7       | 6    | 78.0 | 54.0   | 60.0    | 7    | 12      | 56.0  | 7       | 12   | 39.0             | 7    | 7    | 7    | 7.5     | 70.5 | 200     | 212    | 8       | 6    | 64.0 | 5                            | 12        | 7    | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 13 FT |                  |    |    |    |               |      |         |      |      |       |       |       |         |      |       |         |                  |      |         |      |         |      |      |       |       |       |         |      |           | HEIGHT (HT) = 7 FT OR 8 FT OR 9 FT |      |         |      |    |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|-------|-------|-------|---------|------|-------|---------|------------------|------|---------|------|---------|------|------|-------|-------|-------|---------|------|-----------|------------------------------------|------|---------|------|----|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |       |         |      |       |         | BOTTOM SLAB BARS |      |         |      |         |      |      |       |       |       |         |      | WALL BARS |                                    |      |         |      |    |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |       | H1 BARS |      |       | H2 BARS |                  |      | A2 BARS |      | J4 BARS |      |      |       |       |       | H3 BARS |      |           | B1 BARS                            |      | B2 BARS |      |    |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |       | SIZE    | SPA. | C5    | SIZE    | SPA.             | C6   | SIZE    | SPA. | SIZE    | SPA. | C4   | K3    |       |       | SIZE    | SPA. | C7        | SIZE                               | SPA. | SIZE    | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=7' | HT=8' | HT=9' |         |      |       |         |                  |      |         |      |         |      |      | HT=7' | HT=8' | HT=9' |         |      |           |                                    |      |         |      |    |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14               | 10 | 8  | 8  | 5             | 6    | 5       | 8.5  | 61.8 | 30.0  | 34.0  | 34.0  | 5       | 12   | 125.5 | 5       | 12               | 36.5 | 5       | 7    | 6       | 7    | 61.0 | 90    | 102   | 114   | 6       | 6    | 60.0      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15               | 12 | 8  | 8  | 6             | 8    | 5       | 8    | 65.8 | 31.0  | 35.0  | 35.0  | 6       | 16   | 129.5 | 6       | 16               | 43.5 | 5       | 7    | 5       | 7    | 53.8 | 92    | 104   | 116   | 6       | 6.5  | 59.5      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 11               | 11 | 8  | 8  | 6             | 8    | 6       | 7    | 52.1 | 31.0  | 31.0  | 31.0  | 6       | 13   | 82.0  | 6       | 13               | 38.0 | 5       | 6.5  | 5       | 6    | 46.5 | 91    | 103   | 115   | 7       | 6.5  | 62.0      | 5                                  | 11   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 12               | 12 | 8  | 8  | 5             | 6.5  | 5       | 6.5  | 44.1 | 32.0  | 32.0  | 32.0  | 6       | 13   | 68.0  | 6       | 13               | 36.5 | 5       | 6    | 5       | 6.5  | 42.8 | 92    | 104   | 116   | 7       | 6.5  | 61.0      | 5                                  | 12   | 5       | 12   | 12 |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 12               | 13 | 8  | 8  | 5             | 6    | 5       | 6    | 41.5 | 32.0  | 32.0  | 32.0  | 7       | 16   | 65.0  | 7       | 16               | 38.5 | 5       | 6    | 5       | 6.5  | 40.0 | 93    | 105   | 117   | 7       | 6.5  | 60.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 13               | 15 | 8  | 8  | 5             | 6    | 5       | 6    | 39.5 | 29.0  | 33.0  | 33.0  | 7       | 15   | 63.0  | 7       | 15               | 38.0 | 6       | 7.5  | 5       | 8    | 38.0 | 95    | 107   | 119   | 7       | 7    | 60.5      | 5                                  | 12   | 5       | 12   | 0  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 15               | 16 | 8  | 8  | 6             | 8    | 5       | 6.5  | 42.4 | 35.0  | 35.0  | 35.0  | 7       | 16   | 70.0  | 7       | 16               | 46.0 | 6       | 7    | 5       | 7.5  | 37.1 | 96    | 108   | 120   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 11   | 0  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 16               | 17 | 8  | 8  | 6             | 8    | 5       | 6    | 41.1 | 36.0  | 36.0  | 36.0  | 7       | 15   | 69.0  | 7       | 15               | 46.0 | 6       | 7    | 5       | 7    | 36.1 | 97    | 109   | 121   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 10   | 0  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 17               | 18 | 8  | 8  | 6             | 7.5  | 5       | 6    | 40.1 | 37.0  | 37.0  | 37.0  | 7       | 14   | 68.5  | 7       | 14               | 45.5 | 6       | 6    | 5       | 6.5  | 35.4 | 98    | 110   | 122   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 18               | 20 | 8  | 8  | 6             | 6.5  | 6       | 8    | 43.5 | 38.0  | 38.0  | 38.0  | 7       | 14   | 68.0  | 7       | 14               | 45.5 | 6       | 6.5  | 5       | 6    | 34.8 | 100   | 112   | 124   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 9.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 20               | 21 | 8  | 8  | 6             | 6.5  | 6       | 7.5  | 42.6 | 44.0  | 44.0  | 44.0  | 7       | 14   | 67.0  | 7       | 14               | 45.5 | 6       | 6    | 6       | 7.5  | 37.5 | 101   | 113   | 125   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 9    | 0  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 21               | 23 | 8  | 8  | 6             | 6    | 6       | 6.5  | 42.5 | 45.0  | 45.0  | 45.0  | 7       | 14   | 66.5  | 7       | 14               | 45.0 | 6       | 6    | 6       | 6.5  | 37.3 | 103   | 115   | 127   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 8    | 0  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 22               | 24 | 9  | 8  | 6             | 6    | 6       | 7.5  | 43.1 | 42.0  | 42.0  | 46.0  | 7       | 13   | 66.0  | 7       | 13               | 45.0 | 6       | 6    | 6       | 7    | 37.6 | 104   | 116   | 128   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 23               | 25 | 9  | 8  | 7             | 7.5  | 6       | 6.5  | 42.9 | 47.0  | 47.0  | 47.0  | 7       | 13   | 65.5  | 7       | 13               | 45.0 | 6       | 6    | 6       | 7    | 37.6 | 105   | 117   | 129   | 7       | 6.5  | 60.0      | 5                                  | 12   | 5       | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 24               | 26 | 9  | 8  | 7             | 7.5  | 6       | 7    | 41.3 | 48.0  | 48.0  | 48.0  | 7       | 13   | 64.5  | 7       | 13               | 44.5 | 7       | 8    | 6       | 6.5  | 36.1 | 106   | 118   | 130   | 7       | 6.5  | 59.5      | 5                                  | 12   | 5       | 8.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 25               | 27 | 9  | 8  | 7             | 7    | 6       | 6    | 41.3 | 49.0  | 49.0  | 49.0  | 7       | 13   | 64.0  | 7       | 13               | 44.5 | 7       | 7.5  | 6       | 6.5  | 36.3 | 107   | 119   | 131   | 7       | 6    | 59.5      | 5                                  | 12   | 5       | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 26               | 29 | 10 | 8  | 7             | 7    | 6       | 7    | 42.3 | 50.0  | 50.0  | 50.0  | 7       | 13   | 63.5  | 7       | 13               | 44.0 | 7       | 8    | 6       | 6.5  | 36.9 | 109   | 121   | 133   | 8       | 7.5  | 65.5      | 5                                  | 12   | 5       | 8    | 0  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 27               | 30 | 10 | 8  | 7             | 6.5  | 6       | 6.5  | 42.3 | 51.0  | 51.0  | 51.0  | 7       | 13   | 62.5  | 7       | 13               | 43.5 | 7       | 7.5  | 6       | 6.5  | 37.0 | 110   | 122   | 134   | 8       | 7.5  | 65.5      | 5                                  | 12   | 5       | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 28               | 31 | 11 | 8  | 7             | 6.5  | 6       | 7.5  | 43.1 | 52.0  | 52.0  | 52.0  | 7       | 12   | 62.0  | 7       | 12               | 42.5 | 7       | 7.5  | 6       | 7    | 37.5 | 111   | 123   | 135   | 8       | 7    | 65.5      | 5                                  | 12   | 5       | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 29               | 32 | 11 | 8  | 7             | 6    | 6       | 7    | 43.1 | 53.0  | 53.0  | 53.0  | 7       | 12   | 61.0  | 7       | 12               | 41.5 | 7       | 7.5  | 6       | 6.5  | 37.6 | 112   | 124   | 136   | 8       | 7    | 65.5      | 5                                  | 12   | 5       | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 30               | 33 | 11 | 8  | 7             | 6    | 6       | 7    | 43.1 | 54.0  | 54.0  | 54.0  | 7       | 12   | 60.0  | 7       | 12               | 41.0 | 7       | 7    | 6       | 6.5  | 37.9 | 113   | 125   | 137   | 8       | 6.5  | 65.5      | 5                                  | 12   | 5       | 7    | 0  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 31               | 34 | 12 | 8  | 7             | 6    | 6       | 7.5  | 44.0 | 55.0  | 55.0  | 55.0  | 8       | 15   | 67.0  | 8       | 15               | 48.0 | 7       | 7    | 6       | 7    | 38.4 | 114   | 126   | 138   | 8       | 6.5  | 65.5      | 5                                  | 12   | 5       | 7    | 0  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 32               | 35 | 12 | 8  | 8             | 7.5  | 6       | 7    | 44.0 | 56.0  | 56.0  | 56.0  | 8       | 14   | 66.5  | 8       | 14               | 47.0 | 7       | 7    | 6       | 6.5  | 38.5 | 115   | 127   | 139   | 8       | 6.5  | 65.5      | 5                                  | 12   | 5       | 7    | 0  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 33               | 36 | 12 | 8  | 8             | 7    | 6       | 7    | 44.0 | 57.0  | 57.0  | 57.0  | 8       | 14   | 66.0  | 8       | 14               | 46.0 | 7       | 7    | 6       | 6.5  | 38.8 | 116   | 128   | 140   | 8       | 6    | 65.5      | 5                                  | 12   | 5       | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 33               | 37 | 12 | 8  | 8             | 6.5  | 6       | 7    | 44.0 | 57.0  | 57.0  | 57.0  | 8       | 13   | 66.0  | 8       | 13               | 46.5 | 7       | 6.5  | 6       | 6.5  | 38.8 | 117   | 129   | 141   | 8       | 6    | 65.5      | 5                                  | 12   | 5       | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 34               | 38 | 12 | 8  | 8             | 7    | 6       | 6    | 44.0 | 58.0  | 58.0  | 58.0  | 8       | 14   | 65.0  | 8       | 14               | 46.0 | 7       | 6.5  | 6       | 6    | 39.0 | 118   | 130   | 142   | 8       | 6    | 65.5      | 5                                  | 12   | 5       | 6    | 0  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 13 FT |                  |    |    |    |               |      |         |      |      |        |        |        |         |      |       |         |                  |      |         |      |         |      |      |        |        |        |         |      |           |         |      | HEIGHT (HT) = 10 FT OR 11 FT OR 12 FT |      |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|--------|--------|--------|---------|------|-------|---------|------------------|------|---------|------|---------|------|------|--------|--------|--------|---------|------|-----------|---------|------|---------------------------------------|------|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |        |        |         |      |       |         | BOTTOM SLAB BARS |      |         |      |         |      |      |        |        |        |         |      | WALL BARS |         |      |                                       |      |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |        |        |        | H1 BARS |      |       | H2 BARS |                  |      | A2 BARS |      | J4 BARS |      |      |        |        |        | H3 BARS |      |           | B1 BARS |      | B2 BARS                               |      |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | HT=10' | HT=11' | HT=12' | SIZE    | SPA. | C5    | SIZE    | SPA.             | C6   | SIZE    | SPA. | SIZE    | SPA. | C4   | HT=10' | HT=11' | HT=12' | SIZE    | SPA. | C7        | SIZE    | SPA. | SIZE                                  | SPA. | G1  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | 1 FT             | 14 | 11 | 9  | 10            | 5    | 6       | 5    | 7.5  | 62.6   | 34.0   | 34.0   | 34.0    | 5    | 12    | 126.5   | 5                | 12   | 36.5    | 5    | 6.5     | 6    | 6.5  | 81.1   | 127    | 139    | 151     | 6    | 6.5       | 60.5    | 5    | 11.5                                  | 5    | 9.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15               | 12 | 9  | 10 | 6             | 8    | 5       | 7.5  | 66.6 | 35.0   | 35.0   | 35.0   | 6       | 16   | 130.5 | 6       | 16               | 43.5 | 5       | 6.5  | 6       | 6.5  | 75.6 | 128    | 140    | 152    | 6       | 6.5  | 60.0      | 5       | 12   | 5                                     | 9    | 12  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 11               | 11 | 9  | 10 | 6             | 8    | 6       | 7    | 78.5 | 35.0   | 35.0   | 35.0   | 6       | 13   | 84.0  | 6       | 13               | 38.0 | 5       | 6.5  | 6       | 6    | 66.3 | 127    | 139    | 151    | 7       | 6.5  | 62.0      | 5       | 9    | 5                                     | 8.5  | 12  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 12               | 12 | 9  | 10 | 5             | 6.5  | 6       | 6.5  | 63.6 | 32.0   | 36.0   | 36.0   | 6       | 13   | 67.0  | 6       | 13               | 37.0 | 5       | 6    | 6       | 6    | 61.5 | 128    | 140    | 152    | 7       | 6.5  | 61.5      | 5       | 12   | 5                                     | 8.5  | 12  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 12               | 14 | 9  | 10 | 5             | 6    | 6       | 6.5  | 58.3 | 32.0   | 32.0   | 36.0   | 6       | 12   | 61.5  | 6       | 12               | 36.0 | 6       | 8    | 6       | 6.5  | 59.1 | 130    | 142    | 154    | 7       | 7    | 61.0      | 5       | 12   | 5                                     | 8.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 13               | 15 | 9  | 10 | 5             | 6    | 6       | 6    | 55.4 | 33.0   | 33.0   | 37.0   | 7       | 15   | 63.0  | 7       | 15               | 38.5 | 6       | 7.5  | 6       | 6.5  | 56.6 | 131    | 143    | 155    | 7       | 7    | 61.0      | 5       | 12   | 5                                     | 8.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 14               | 16 | 10 | 10 | 5             | 6    | 6       | 6.5  | 53.6 | 34.0   | 34.0   | 38.0   | 7       | 15   | 61.5  | 7       | 15               | 38.5 | 6       | 7    | 6       | 7    | 54.6 | 132    | 144    | 156    | 7       | 6.5  | 60.5      | 5       | 12   | 5                                     | 8    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 16               | 17 | 10 | 10 | 6             | 8    | 6       | 7    | 58.0 | 36.0   | 36.0   | 40.0   | 7       | 15   | 69.0  | 7       | 15               | 46.5 | 6       | 7    | 6       | 6.5  | 53.3 | 133    | 145    | 157    | 7       | 6.5  | 60.5      | 5       | 12   | 5                                     | 8    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 17               | 19 | 11 | 10 | 6             | 7.5  | 6       | 7    | 57.5 | 37.0   | 37.0   | 41.0   | 7       | 15   | 68.5  | 7       | 15               | 46.0 | 6       | 6.5  | 6       | 8    | 52.4 | 135    | 147    | 159    | 7       | 7    | 60.5      | 5       | 12   | 5                                     | 7.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 18               | 20 | 12 | 10 | 6             | 7    | 6       | 7.5  | 57.4 | 38.0   | 38.0   | 38.0   | 7       | 14   | 68.0  | 7       | 14               | 46.0 | 6       | 6.5  | 5       | 6    | 48.8 | 136    | 148    | 160    | 7       | 6.5  | 60.5      | 5       | 12   | 5                                     | 7    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 19               | 21 | 12 | 10 | 6             | 6.5  | 6       | 7    | 56.6 | 39.0   | 39.0   | 43.0   | 7       | 14   | 67.5  | 7       | 14               | 46.0 | 6       | 6    | 6       | 8    | 51.1 | 137    | 149    | 161    | 7       | 6.5  | 60.5      | 5       | 12   | 5                                     | 7    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 21               | 23 | 12 | 10 | 6             | 6    | 6       | 6.5  | 56.1 | 41.0   | 41.0   | 45.0   | 7       | 14   | 66.5  | 7       | 14               | 45.5 | 6       | 6    | 6       | 7.5  | 51.0 | 139    | 151    | 163    | 7       | 6.5  | 60.5      | 5       | 12   | 5                                     | 7    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 22               | 24 | 13 | 10 | 6             | 6    | 6       | 7    | 56.5 | 42.0   | 42.0   | 46.0   | 7       | 14   | 66.0  | 7       | 14               | 45.5 | 6       | 6    | 6       | 8    | 51.1 | 140    | 152    | 164    | 7       | 6.5  | 60.5      | 5       | 12   | 5                                     | 6.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 23               | 25 | 13 | 10 | 7             | 7.5  | 6       | 6.5  | 56.3 | 43.0   | 43.0   | 47.0   | 7       | 14   | 65.5  | 7       | 14               | 45.5 | 7       | 7.5  | 6       | 7.5  | 51.0 | 141    | 153    | 165    | 7       | 6.5  | 60.5      | 5       | 12   | 5                                     | 6.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 24               | 26 | 13 | 10 | 7             | 7.5  | 6       | 6.5  | 54.4 | 44.0   | 44.0   | 48.0   | 7       | 14   | 64.5  | 7       | 14               | 45.0 | 7       | 7.5  | 6       | 8    | 49.1 | 142    | 154    | 166    | 7       | 6.5  | 60.0      | 5       | 12   | 5                                     | 6.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 25               | 28 | 13 | 10 | 7             | 7    | 6       | 6    | 54.4 | 45.0   | 45.0   | 49.0   | 7       | 14   | 64.0  | 7       | 14               | 45.0 | 7       | 8    | 6       | 8    | 49.3 | 144    | 156    | 168    | 7       | 6    | 60.0      | 5       | 12   | 5                                     | 6.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 26               | 29 | 14 | 10 | 7             | 7    | 6       | 6.5  | 55.1 | 46.0   | 50.0   | 50.0   | 7       | 13   | 63.5  | 7       | 13               | 44.0 | 7       | 7.5  | 6       | 8.5  | 49.8 | 145    | 157    | 169    | 8       | 7.5  | 66.0      | 5       | 12   | 5                                     | 6    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 27               | 30 | 14 | 10 | 7             | 6.5  | 6       | 6    | 55.0 | 47.0   | 51.0   | 51.0   | 7       | 13   | 62.5  | 7       | 13               | 43.0 | 7       | 7.5  | 6       | 8    | 49.8 | 146    | 158    | 170    | 8       | 7.5  | 66.0      | 5       | 12   | 5                                     | 6    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 28               | 31 | 15 | 10 | 7             | 6.5  | 6       | 6.5  | 55.8 | 52.0   | 52.0   | 52.0   | 7       | 12   | 61.5  | 7       | 12               | 42.5 | 7       | 7    | 6       | 7.5  | 50.3 | 147    | 159    | 171    | 8       | 7    | 66.0      | 5       | 12   | 6                                     | 8    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 29               | 32 | 15 | 10 | 7             | 6    | 6       | 6    | 55.6 | 53.0   | 53.0   | 53.0   | 7       | 12   | 60.5  | 7       | 12               | 41.5 | 7       | 7    | 6       | 7.5  | 50.4 | 148    | 160    | 172    | 8       | 7    | 66.0      | 5       | 12   | 6                                     | 8    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 30               | 33 | 16 | 10 | 7             | 6    | 6       | 6    | 56.4 | 54.0   | 54.0   | 54.0   | 7       | 12   | 59.5  | 7       | 12               | 41.0 | 7       | 6.5  | 6       | 7    | 50.8 | 149    | 161    | 173    | 8       | 6.5  | 66.0      | 5       | 12   | 6                                     | 8    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 31               | 35 | 16 | 10 | 7             | 6    | 6       | 6    | 56.5 | 55.0   | 55.0   | 55.0   | 8       | 15   | 67.0  | 8       | 15               | 48.0 | 7       | 7    | 6       | 6.5  | 51.0 | 151    | 163    | 175    | 8       | 6.5  | 66.0      | 5       | 12   | 6                                     | 8    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 31               | 35 | 16 | 10 | 8             | 7    | 7       | 7.5  | 61.4 | 55.0   | 55.0   | 55.0   | 8       | 14   | 67.0  | 8       | 14               | 48.5 | 7       | 6    | 6       | 6.5  | 50.9 | 151    | 163    | 175    | 8       | 6.5  | 66.0      | 5       | 12   | 6                                     | 8    | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 32               | 36 | 17 | 10 | 8             | 7.5  | 6       | 6    | 57.1 | 56.0   | 56.0   | 56.0   | 8       | 14   | 66.5  | 8       | 14               | 47.5 | 7       | 6    | 6       | 6.5  | 51.4 | 152    | 164    | 176    | 8       | 6    | 66.0      | 5       | 12   | 6                                     | 7.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 33               | 37 | 17 | 10 | 8             | 7    | 7       | 7.5  | 62.1 | 57.0   | 57.0   | 57.0   | 8       | 14   | 66.0  | 8       | 14               | 47.0 | 7       | 6    | 6       | 6.5  | 51.5 | 153    | 165    | 177    | 8       | 6    | 66.0      | 5       | 12   | 6                                     | 7.5  | 0   |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 34               | 38 | 17 | 10 | 8             | 7    | 7       | 7    | 62.1 | 58.0   | 58.0   | 58.0   | 8       | 14   | 65.5  | 8       | 14               | 46.5 | 7       | 6    | 6       | 6    | 6    | 51.8   | 154    | 166    | 178     | 8    | 6         | 66.0    | 5    | 12                                    | 6    | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 13 FT |                     |    |    |    |               |      |         |      |      |        |         |      |         |       |         |      |         |      |                  |    |         |        |         |      |         |      |      | HEIGHT (HT) = 13 FT OR 14 FT |      |    |     |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|--------|---------|------|---------|-------|---------|------|---------|------|------------------|----|---------|--------|---------|------|---------|------|------|------------------------------|------|----|-----|----|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |      |         |       |         |      |         |      | BOTTOM SLAB BARS |    |         |        |         |      |         |      |      |                              |      |    |     |    | WALL BARS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |      | H2 BARS |       | A2 BARS |      | J4 BARS |      |                  |    | H3 BARS |        | B1 BARS |      | B2 BARS |      |      |                              |      |    |     |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         | SIZE | SPA.    | C5    | SIZE    | SPA. | C6      | SIZE | SPA.             | C4 | K3      |        | SIZE    | SPA. | C7      | SIZE | SPA. | SIZE                         | SPA. | G1 |     |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=13' | HT=14'  |      |         |       |         |      |         |      |                  |    | HT=13'  | HT=14' |         |      |         |      |      |                              |      |    |     |    |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14                  | 11 | 11 | 11 | 5             | 6    | 5       | 7    | 64.1 | 34.0   | 34.0    | 5    | 12      | 127.5 | 5       | 12   | 36.5    | 5    | 6.5              | 5  | 6       | 85.3   | 163     | 175  | 6       | 6    | 60.5 | 5                            | 12   | 5  | 8   | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 12 | 11 | 11 | 6             | 8    | 5       | 7    | 68.1 | 35.0   | 35.0    | 6    | 16      | 131.5 | 6       | 16   | 43.5    | 5    | 6.5              | 5  | 6       | 80.9   | 164     | 176  | 6       | 6.5  | 60.0 | 5                            | 12   | 5  | 7.5 | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 11                  | 12 | 11 | 11 | 5             | 6    | 5       | 6    | 92.9 | 31.0   | 31.0    | 6    | 13      | 82.5  | 6       | 13   | 38.0    | 5    | 6                | 5  | 6       | 75.5   | 164     | 176  | 7       | 7    | 62.5 | 5                            | 11.5 | 5  | 7.5 | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 11                  | 12 | 11 | 11 | 5             | 6    | 6       | 7.5  | 74.6 | 31.0   | 35.0    | 6    | 12      | 64.5  | 6       | 12   | 37.0    | 5    | 6                | 6  | 6.5     | 72.1   | 164     | 176  | 7       | 6.5  | 61.5 | 5                            | 12   | 5  | 7.5 | 12 |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 12                  | 14 | 11 | 11 | 5             | 6.5  | 6       | 7.5  | 68.5 | 32.0   | 36.0    | 6    | 12      | 61.5  | 6       | 12   | 36.5    | 6    | 8                | 6  | 7       | 70.1   | 166     | 178  | 7       | 7    | 61.5 | 5                            | 12   | 5  | 7.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 13                  | 15 | 11 | 11 | 5             | 6.5  | 6       | 7    | 65.9 | 37.0   | 37.0    | 6    | 12      | 59.5  | 6       | 12   | 36.0    | 6    | 7.5              | 6  | 6.5     | 67.4   | 167     | 179  | 7       | 6.5  | 61.0 | 5                            | 12   | 5  | 7.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 14                  | 16 | 12 | 11 | 5             | 6    | 6       | 7    | 64.0 | 38.0   | 38.0    | 7    | 15      | 61.5  | 7       | 15   | 38.5    | 6    | 7                | 6  | 7       | 65.5   | 168     | 180  | 7       | 6.5  | 60.5 | 5                            | 12   | 5  | 7   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 15                  | 17 | 12 | 11 | 6             | 7.5  | 6       | 6.5  | 68.5 | 39.0   | 39.0    | 7    | 15      | 69.0  | 7       | 15   | 46.5    | 6    | 6.5              | 6  | 6       | 64.1   | 169     | 181  | 7       | 6.5  | 60.5 | 5                            | 12   | 5  | 7   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 17                  | 19 | 13 | 11 | 6             | 7.5  | 6       | 6.5  | 68.0 | 41.0   | 41.0    | 7    | 15      | 68.0  | 7       | 15   | 46.5    | 6    | 6.5              | 6  | 7       | 63.4   | 171     | 183  | 7       | 6.5  | 60.5 | 5                            | 12   | 5  | 6.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 18                  | 20 | 13 | 11 | 6             | 7    | 6       | 6    | 66.9 | 42.0   | 42.0    | 7    | 15      | 67.5  | 7       | 15   | 46.5    | 6    | 6                | 6  | 6       | 62.4   | 172     | 184  | 7       | 6.5  | 60.5 | 5                            | 12   | 5  | 6.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 19                  | 22 | 14 | 11 | 6             | 6.5  | 6       | 6    | 66.5 | 43.0   | 43.0    | 7    | 14      | 67.0  | 7       | 14   | 46.0    | 6    | 6                | 6  | 7       | 62.0   | 174     | 186  | 7       | 7    | 60.5 | 5                            | 12   | 5  | 6   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 20                  | 23 | 14 | 11 | 6             | 6    | 7       | 8    | 70.6 | 44.0   | 44.0    | 7    | 14      | 66.5  | 7       | 14   | 46.0    | 6    | 6                | 6  | 6       | 61.3   | 175     | 187  | 7       | 6.5  | 60.5 | 5                            | 12   | 5  | 6   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 22                  | 25 | 15 | 11 | 6             | 6    | 6       | 6    | 66.1 | 46.0   | 46.0    | 7    | 15      | 65.5  | 7       | 15   | 45.5    | 6    | 6                | 6  | 7       | 61.5   | 177     | 189  | 7       | 6.5  | 60.5 | 5                            | 12   | 6  | 8   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 23                  | 25 | 15 | 11 | 7             | 7.5  | 7       | 7.5  | 70.6 | 47.0   | 47.0    | 7    | 14      | 65.0  | 7       | 14   | 45.5    | 7    | 7                | 6  | 6       | 60.9   | 177     | 189  | 7       | 6.5  | 60.5 | 5                            | 12   | 6  | 8   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 24                  | 27 | 16 | 11 | 7             | 7.5  | 7       | 8    | 71.0 | 48.0   | 48.0    | 7    | 14      | 64.5  | 7       | 14   | 45.0    | 7    | 8                | 6  | 7       | 61.3   | 179     | 191  | 7       | 6    | 60.5 | 5                            | 12   | 6  | 8   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 25                  | 28 | 16 | 11 | 7             | 7    | 7       | 8    | 68.5 | 49.0   | 49.0    | 7    | 14      | 63.5  | 7       | 14   | 44.0    | 7    | 7.5              | 6  | 7       | 58.9   | 180     | 192  | 7       | 6    | 60.5 | 5                            | 12   | 6  | 8   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 26                  | 29 | 16 | 11 | 7             | 7    | 7       | 7.5  | 68.4 | 50.0   | 50.0    | 7    | 13      | 62.5  | 7       | 13   | 43.5    | 7    | 7.5              | 6  | 6.5     | 58.9   | 181     | 193  | 8       | 7.5  | 66.5 | 5                            | 12   | 6  | 8   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 27                  | 30 | 17 | 11 | 7             | 6.5  | 7       | 7.5  | 69.0 | 51.0   | 51.0    | 7    | 13      | 61.5  | 7       | 13   | 42.5    | 7    | 7.5              | 6  | 7       | 59.1   | 182     | 194  | 8       | 7.5  | 66.5 | 5                            | 12   | 6  | 7.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 27                  | 31 | 17 | 11 | 7             | 6    | 7       | 6.5  | 68.9 | 51.0   | 51.0    | 7    | 12      | 61.5  | 7       | 12   | 43.5    | 7    | 7                | 6  | 7       | 59.1   | 183     | 195  | 8       | 7    | 66.5 | 5                            | 12   | 6  | 7.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 28                  | 33 | 18 | 11 | 7             | 6    | 7       | 7    | 69.8 | 52.0   | 52.0    | 7    | 12      | 60.0  | 7       | 12   | 42.5    | 7    | 7                | 6  | 6.5     | 59.6   | 185     | 197  | 8       | 6.5  | 66.5 | 5                            | 12   | 6  | 7   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 29                  | 34 | 19 | 11 | 7             | 6    | 7       | 7    | 70.4 | 53.0   | 53.0    | 7    | 12      | 59.5  | 7       | 12   | 41.5    | 7    | 7                | 6  | 6.5     | 60.0   | 186     | 198  | 8       | 6.5  | 66.5 | 5                            | 12   | 6  | 6.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 30                  | 35 | 19 | 11 | 7             | 6    | 7       | 6.5  | 70.4 | 54.0   | 54.0    | 7    | 12      | 59.0  | 7       | 12   | 40.5    | 7    | 7                | 6  | 6.5     | 60.1   | 187     | 199  | 8       | 6.5  | 66.5 | 5                            | 12   | 6  | 6.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 31                  | 36 | 20 | 11 | 7             | 6    | 7       | 7    | 71.0 | 55.0   | 55.0    | 8    | 15      | 66.5  | 8       | 15   | 47.5    | 7    | 7                | 6  | 6       | 60.5   | 188     | 200  | 8       | 6    | 66.5 | 5                            | 12   | 6  | 6.5 | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 32                  | 37 | 21 | 11 | 8             | 7.5  | 7       | 7    | 71.8 | 56.0   | 56.0    | 8    | 15      | 66.0  | 8       | 15   | 47.0    | 7    | 6.5              | 6  | 6       | 60.8   | 189     | 201  | 8       | 6    | 66.5 | 5                            | 12   | 6  | 6   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 32                  | 38 | 21 | 11 | 8             | 7    | 7       | 6    | 71.8 | 56.0   | 56.0    | 8    | 14      | 66.0  | 8       | 14   | 47.0    | 7    | 6.5              | 6  | 6       | 60.9   | 190     | 202  | 8       | 6    | 66.5 | 5                            | 12   | 6  | 6   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 33                  | 39 | 22 | 11 | 8             | 7    | 7       | 6.5  | 72.5 | 57.0   | 57.0    | 8    | 15      | 65.5  | 8       | 15   | 47.0    | 7    | 6.5              | 6  | 6       | 61.3   | 191     | 203  | 8       | 6    | 66.5 | 5                            | 12   | 6  | 6   | 0  |           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 13 FT |                     |    |    |    |               |      |         |      |       |        |         |      |         |       |         |      |                  |      |      |    |         |        |         |      |         |      |      | HEIGHT (HT) = 15 FT OR 16 FT |           |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|-------|--------|---------|------|---------|-------|---------|------|------------------|------|------|----|---------|--------|---------|------|---------|------|------|------------------------------|-----------|----|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |       |        |         |      |         |       |         |      | BOTTOM SLAB BARS |      |      |    |         |        |         |      |         |      |      |                              | WALL BARS |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |       |        | H1 BARS |      | H2 BARS |       | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |        | B1 BARS |      | B2 BARS |      |      |                              |           |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1    | K2     |         | SIZE | SPA.    | C5    | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | K3      |        | SIZE    | SPA. | C7      | SIZE | SPA. | SIZE                         | SPA.      | G1 |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |       | HT=15' | HT=16'  |      |         |       |         |      |                  |      |      |    | HT=15'  | HT=16' |         |      |         |      |      |                              |           |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 14                  | 12 | 12 | 13 | 5             | 6    | 5       | 6    | 65.0  | 34.0   | 34.0    | 5    | 12      | 128.5 | 5       | 12   | 36.0             | 5    | 6.5  | 6  | 7       | 99.8   | 188     | 200  | 6       | 6.5  | 61.0 | 5                            | 12        | 5  | 7   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 13 | 12 | 13 | 6             | 8    | 6       | 8.5  | 72.0  | 35.0   | 39.0    | 6    | 16      | 135.5 | 6       | 16   | 43.5             | 5    | 6.5  | 6  | 7       | 96.4   | 189     | 201  | 6       | 6.5  | 60.5 | 5                            | 12        | 5  | 7   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 11                  | 13 | 12 | 13 | 5             | 6    | 6       | 7    | 115.0 | 35.0   | 35.0    | 6    | 14      | 81.0  | 6       | 14   | 38.5             | 5    | 6    | 6  | 6.5     | 91.6   | 189     | 201  | 6       | 6    | 60.5 | 5                            | 12        | 5  | 7   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 11                  | 13 | 12 | 13 | 5             | 6.5  | 6       | 6.5  | 84.8  | 35.0   | 35.0    | 6    | 13      | 63.5  | 6       | 13   | 37.5             | 5    | 6    | 6  | 6       | 84.8   | 189     | 201  | 7       | 7    | 62.0 | 5                            | 12        | 5  | 6.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 12                  | 14 | 13 | 13 | 5             | 6.5  | 6       | 7    | 78.8  | 36.0   | 36.0    | 6    | 13      | 61.0  | 6       | 13   | 37.0             | 6    | 8    | 6  | 6.5     | 80.6   | 190     | 202  | 7       | 7    | 61.5 | 5                            | 12        | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 13                  | 15 | 13 | 13 | 5             | 6.5  | 6       | 7    | 75.9  | 37.0   | 37.0    | 6    | 12      | 59.5  | 6       | 12   | 36.5             | 6    | 7.5  | 6  | 6.5     | 78.4   | 191     | 203  | 7       | 6.5  | 61.0 | 5                            | 12        | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 14                  | 16 | 14 | 13 | 5             | 6    | 6       | 7    | 72.9  | 38.0   | 38.0    | 6    | 12      | 58.5  | 6       | 12   | 36.5             | 6    | 6.5  | 6  | 6.5     | 75.6   | 192     | 204  | 7       | 6.5  | 61.0 | 5                            | 12        | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 15                  | 18 | 14 | 13 | 6             | 8    | 6       | 6    | 77.1  | 39.0   | 39.0    | 7    | 16      | 69.0  | 7       | 16   | 47.0             | 6    | 6.5  | 6  | 6       | 75.3   | 194     | 206  | 7       | 7    | 61.0 | 5                            | 12        | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 16                  | 19 | 15 | 13 | 6             | 7.5  | 6       | 6    | 76.0  | 40.0   | 40.0    | 7    | 15      | 68.0  | 7       | 15   | 47.0             | 6    | 6.5  | 6  | 6       | 73.3   | 195     | 207  | 7       | 6.5  | 61.0 | 5                            | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 18                  | 20 | 16 | 13 | 6             | 7    | 6       | 6    | 76.0  | 42.0   | 42.0    | 7    | 15      | 67.5  | 7       | 15   | 47.0             | 6    | 6    | 6  | 6       | 71.6   | 196     | 208  | 7       | 6.5  | 61.0 | 5                            | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 19                  | 22 | 16 | 13 | 6             | 6.5  | 7       | 8    | 80.4  | 43.0   | 49.0    | 7    | 15      | 67.5  | 7       | 15   | 47.0             | 6    | 6    | 7  | 7.5     | 74.5   | 198     | 210  | 7       | 7    | 61.0 | 5                            | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 20                  | 23 | 17 | 13 | 6             | 6.5  | 7       | 8    | 79.9  | 44.0   | 50.0    | 7    | 14      | 67.0  | 7       | 14   | 46.5             | 6    | 6    | 7  | 7.5     | 73.9   | 199     | 211  | 7       | 6.5  | 61.0 | 5                            | 12        | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 21                  | 24 | 17 | 13 | 6             | 6    | 7       | 7.5  | 79.6  | 45.0   | 51.0    | 7    | 14      | 66.5  | 7       | 14   | 46.5             | 7    | 7    | 7  | 7       | 73.6   | 200     | 212  | 7       | 6.5  | 61.0 | 5                            | 12        | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 23                  | 26 | 18 | 13 | 7             | 7.5  | 7       | 7.5  | 80.1  | 47.0   | 53.0    | 7    | 15      | 65.5  | 7       | 15   | 46.0             | 7    | 8    | 7  | 8       | 73.9   | 202     | 214  | 7       | 6.5  | 61.0 | 5                            | 12        | 6  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 23                  | 27 | 19 | 13 | 7             | 7.5  | 7       | 7.5  | 80.0  | 47.0   | 47.0    | 7    | 14      | 65.0  | 7       | 14   | 46.0             | 7    | 7.5  | 6  | 6       | 70.9   | 203     | 215  | 7       | 6    | 61.0 | 5                            | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 24                  | 28 | 19 | 13 | 7             | 7.5  | 7       | 7.5  | 77.8  | 48.0   | 48.0    | 7    | 14      | 64.5  | 7       | 14   | 46.0             | 7    | 7.5  | 6  | 6       | 68.5   | 204     | 216  | 7       | 6    | 61.0 | 5                            | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 25                  | 29 | 19 | 13 | 7             | 7    | 7       | 7    | 77.8  | 49.0   | 49.0    | 7    | 14      | 63.5  | 7       | 14   | 45.5             | 7    | 7.5  | 6  | 6       | 68.6   | 205     | 217  | 8       | 7.5  | 67.0 | 5                            | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 26                  | 30 | 20 | 13 | 7             | 7    | 7       | 7    | 78.3  | 50.0   | 50.0    | 7    | 13      | 63.0  | 7       | 13   | 44.5             | 7    | 6.5  | 6  | 6       | 68.9   | 206     | 218  | 8       | 7.5  | 67.0 | 5                            | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 27                  | 32 | 21 | 13 | 7             | 6.5  | 7       | 7    | 78.9  | 51.0   | 51.0    | 7    | 13      | 62.0  | 7       | 13   | 43.5             | 7    | 7    | 6  | 6       | 69.4   | 208     | 220  | 8       | 7    | 67.0 | 5                            | 12        | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 28                  | 33 | 22 | 13 | 7             | 6.5  | 7       | 7    | 79.4  | 52.0   | 58.0    | 7    | 12      | 61.0  | 7       | 12   | 43.0             | 7    | 7    | 7  | 7.5     | 72.6   | 209     | 221  | 8       | 6.5  | 67.0 | 5                            | 12        | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 29                  | 34 | 22 | 13 | 7             | 6.5  | 7       | 6.5  | 79.5  | 59.0   | 59.0    | 7    | 12      | 60.0  | 7       | 12   | 42.0             | 7    | 7    | 7  | 7.5     | 72.9   | 210     | 222  | 8       | 6.5  | 67.0 | 5                            | 12        | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 30                  | 35 | 23 | 13 | 7             | 6    | 7       | 6.5  | 80.1  | 60.0   | 60.0    | 7    | 12      | 60.0  | 7       | 12   | 41.0             | 7    | 7    | 7  | 7.5     | 73.1   | 211     | 223  | 8       | 6.5  | 67.0 | 5                            | 12        | 7  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 31                  | 36 | 24 | 13 | 7             | 6    | 7       | 6.5  | 80.8  | 55.0   | 61.0    | 8    | 15      | 67.5  | 8       | 15   | 48.5             | 7    | 6.5  | 7  | 7       | 73.5   | 212     | 224  | 8       | 6    | 67.0 | 5                            | 12        | 7  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 32                  | 37 | 24 | 13 | 7             | 6    | 7       | 6    | 80.8  | 56.0   | 62.0    | 8    | 15      | 67.0  | 8       | 15   | 48.0             | 7    | 6.5  | 7  | 7       | 73.6   | 213     | 225  | 8       | 6    | 67.0 | 5                            | 12        | 7  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 32                  | 38 | 26 | 13 | 8             | 7.5  | 7       | 6    | 81.9  | 56.0   | 62.0    | 8    | 14      | 67.0  | 8       | 14   | 48.0             | 7    | 6.5  | 7  | 7.5     | 74.1   | 214     | 226  | 8       | 6    | 67.0 | 5                            | 12        | 7  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 33                  | 39 | 27 | 13 | 8             | 7    | 7       | 6    | 82.6  | 57.0   | 63.0    | 8    | 15      | 66.0  | 8       | 15   | 47.5             | 7    | 6.5  | 7  | 7.5     | 74.5   | 215     | 227  | 8       | 6    | 67.0 | 5                            | 12        | 7  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 14 FT |                     |    |    |    |               |      |         |      |      |       |       |       |         |      |       |         |      |      |                  |      |         |       |       |       |      |      |         |      |      |         |      | HEIGHT (HT) = 7 FT OR 8 FT OR 9 FT |           |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|-------|-------|---------|------|-------|---------|------|------|------------------|------|---------|-------|-------|-------|------|------|---------|------|------|---------|------|------------------------------------|-----------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |       |         |      |       |         |      |      | BOTTOM SLAB BARS |      |         |       |       |       |      |      |         |      |      |         |      |                                    | WALL BARS |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |       | H1 BARS |      |       | H2 BARS |      |      | A2 BARS          |      | J4 BARS |       |       |       |      |      | H3 BARS |      |      | B1 BARS |      | B2 BARS                            |           |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |       | SIZE    | SPA. | C5    | SIZE    | SPA. | C6   | SIZE             | SPA. | C4      | K3    |       |       | SIZE | SPA. | C7      | SIZE | SPA. | SIZE    | SPA. | G1                                 |           |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=7' | HT=8' | HT=9' |         |      |       |         |      |      |                  |      |         | HT=7' | HT=8' | HT=9' |      |      |         |      |      |         |      |                                    |           |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15                  | 11 | 8  | 8  | 6             | 8    | 5       | 8    | 69.3 | 31.0  | 35.0  | 35.0  | 6       | 16   | 137.5 | 6       | 16   | 46.5 | 5                | 6.5  | 5       | 6     | 57.8  | 91    | 103  | 115  | 6       | 6    | 63.0 | 5       | 12   | 5                                  | 12        | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 12 | 8  | 8  | 6             | 8    | 5       | 8    | 69.3 | 35.0  | 35.0  | 35.0  | 6       | 16   | 137.5 | 6       | 16   | 48.0 | 5                | 6    | 5       | 6.5   | 52.5  | 92    | 104  | 116  | 6       | 6    | 62.5 | 5       | 12   | 5                                  | 12        | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 12                  | 11 | 8  | 8  | 6             | 7.5  | 5       | 6    | 48.0 | 32.0  | 32.0  | 32.0  | 6       | 12   | 86.0  | 6       | 12   | 39.5 | 5                | 6.5  | 6       | 7     | 49.3  | 91    | 103  | 115  | 7       | 6    | 64.5 | 5       | 12   | 5                                  | 12        | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 12                  | 13 | 8  | 8  | 6             | 8    | 6       | 7.5  | 47.6 | 32.0  | 32.0  | 32.0  | 7       | 15   | 74.0  | 7       | 15   | 41.0 | 5                | 6    | 5       | 7     | 41.9  | 93    | 105  | 117  | 7       | 6.5  | 64.5 | 5       | 12   | 5                                  | 12        | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 13                  | 14 | 8  | 8  | 5             | 6    | 5       | 6.5  | 41.1 | 33.0  | 33.0  | 33.0  | 7       | 15   | 68.5  | 7       | 15   | 40.0 | 6                | 8    | 5       | 7.5   | 39.1  | 94    | 106  | 118  | 7       | 6.5  | 64.0 | 5       | 12   | 5                                  | 12        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 14                  | 15 | 8  | 8  | 6             | 8    | 5       | 6.5  | 38.6 | 34.0  | 34.0  | 34.0  | 7       | 14   | 66.5  | 7       | 14   | 39.5 | 6                | 7.5  | 5       | 7.5   | 37.4  | 95    | 107  | 119  | 7       | 6    | 63.5 | 5       | 12   | 5                                  | 12        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 16                  | 17 | 8  | 8  | 6             | 8    | 5       | 6.5  | 41.5 | 36.0  | 36.0  | 36.0  | 7       | 14   | 73.0  | 7       | 14   | 47.5 | 6                | 7    | 5       | 7     | 36.1  | 97    | 109  | 121  | 7       | 6.5  | 63.5 | 5       | 12   | 5                                  | 11        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 17                  | 18 | 8  | 8  | 6             | 7.5  | 5       | 6    | 40.3 | 37.0  | 37.0  | 37.0  | 7       | 14   | 72.5  | 7       | 14   | 47.0 | 6                | 6.5  | 5       | 6.5   | 35.1  | 98    | 110  | 122  | 7       | 6.5  | 63.0 | 5       | 12   | 5                                  | 10        | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 18                  | 20 | 8  | 8  | 6             | 7    | 6       | 8    | 43.4 | 38.0  | 38.0  | 38.0  | 7       | 13   | 71.5  | 7       | 13   | 47.0 | 6                | 6    | 5       | 6     | 34.4  | 100   | 112  | 124  | 7       | 6.5  | 63.0 | 5       | 12   | 5                                  | 9.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 20                  | 21 | 8  | 8  | 6             | 6.5  | 6       | 7.5  | 42.4 | 44.0  | 44.0  | 44.0  | 7       | 13   | 71.0  | 7       | 13   | 46.5 | 6                | 6    | 6       | 7.5   | 37.0  | 101   | 113  | 125  | 7       | 6.5  | 63.0 | 5       | 12   | 5                                  | 9.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 21                  | 22 | 8  | 8  | 6             | 6    | 6       | 7    | 41.8 | 45.0  | 45.0  | 45.0  | 7       | 13   | 70.5  | 7       | 13   | 46.5 | 7                | 7.5  | 6       | 7     | 36.5  | 102   | 114  | 126  | 7       | 6    | 63.0 | 5       | 12   | 5                                  | 9         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 23                  | 24 | 8  | 8  | 7             | 7.5  | 6       | 6    | 41.3 | 47.0  | 47.0  | 47.0  | 7       | 13   | 69.5  | 7       | 13   | 46.5 | 7                | 7.5  | 6       | 6     | 36.4  | 104   | 116  | 128  | 7       | 6    | 63.0 | 5       | 12   | 5                                  | 8         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 24                  | 26 | 9  | 8  | 7             | 7.5  | 6       | 7    | 42.1 | 48.0  | 48.0  | 48.0  | 7       | 13   | 69.0  | 7       | 13   | 46.0 | 7                | 7.5  | 6       | 6.5   | 36.8  | 106   | 118  | 130  | 7       | 6.5  | 63.0 | 5       | 12   | 5                                  | 8.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 25                  | 27 | 9  | 8  | 7             | 7    | 6       | 6.5  | 41.9 | 49.0  | 49.0  | 49.0  | 7       | 12   | 68.5  | 7       | 12   | 46.0 | 7                | 7.5  | 6       | 6.5   | 36.6  | 107   | 119  | 131  | 7       | 6    | 63.0 | 5       | 12   | 5                                  | 8         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 26                  | 28 | 9  | 8  | 7             | 7    | 6       | 6    | 41.8 | 50.0  | 50.0  | 50.0  | 7       | 12   | 68.0  | 7       | 12   | 46.0 | 7                | 7.5  | 6       | 6     | 36.6  | 108   | 120  | 132  | 7       | 6    | 63.0 | 5       | 12   | 5                                  | 7.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 27                  | 29 | 9  | 8  | 7             | 6.5  | 6       | 6    | 41.1 | 51.0  | 51.0  | 51.0  | 7       | 12   | 67.0  | 7       | 12   | 45.5 | 7                | 7    | 6       | 6     | 35.4  | 109   | 121  | 133  | 8       | 7.5  | 68.5 | 5       | 12   | 5                                  | 7.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 28                  | 31 | 10 | 8  | 7             | 6.5  | 6       | 6.5  | 41.8 | 52.0  | 52.0  | 52.0  | 7       | 12   | 66.0  | 7       | 12   | 45.0 | 7                | 7    | 6       | 6     | 35.9  | 111   | 123  | 135  | 8       | 7    | 68.5 | 5       | 12   | 5                                  | 8         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 29                  | 32 | 10 | 8  | 7             | 6    | 6       | 6.5  | 41.8 | 53.0  | 53.0  | 53.0  | 7       | 12   | 65.5  | 7       | 12   | 44.5 | 7                | 7    | 6       | 6     | 36.0  | 112   | 124  | 136  | 8       | 7    | 68.5 | 5       | 12   | 5                                  | 7.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 31                  | 33 | 10 | 8  | 7             | 6    | 6       | 6    | 41.8 | 55.0  | 55.0  | 55.0  | 8       | 15   | 71.5  | 8       | 15   | 50.5 | 7                | 7    | 7       | 6.5   | 39.4  | 113   | 125  | 137  | 8       | 6.5  | 68.5 | 5       | 12   | 5                                  | 6.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 31                  | 34 | 11 | 8  | 8             | 7    | 6       | 6.5  | 42.3 | 55.0  | 55.0  | 55.0  | 8       | 14   | 71.5  | 8       | 14   | 51.0 | 7                | 6.5  | 6       | 6     | 36.8  | 114   | 126  | 138  | 8       | 6.5  | 68.5 | 5       | 12   | 5                                  | 7.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 33                  | 35 | 11 | 8  | 8             | 7.5  | 6       | 6    | 42.3 | 57.0  | 57.0  | 57.0  | 8       | 14   | 69.5  | 8       | 14   | 49.0 | 7                | 6    | 6       | 6     | 37.0  | 115   | 127  | 139  | 8       | 6.5  | 68.5 | 5       | 12   | 5                                  | 7         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 33                  | 37 | 11 | 8  | 8             | 7    | 6       | 6    | 42.3 | 57.0  | 57.0  | 57.0  | 8       | 14   | 69.5  | 8       | 14   | 49.5 | 7                | 6.5  | 7       | 6.5   | 40.1  | 117   | 129  | 141  | 8       | 6    | 68.5 | 5       | 12   | 5                                  | 6.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 34                  | 38 | 12 | 8  | 8             | 7    | 6       | 6.5  | 43.3 | 58.0  | 58.0  | 58.0  | 8       | 14   | 69.0  | 8       | 14   | 48.5 | 7                | 6.5  | 6       | 6     | 37.6  | 118   | 130  | 142  | 8       | 6    | 68.5 | 5       | 12   | 5                                  | 7         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 35                  | 39 | 12 | 8  | 8             | 6.5  | 6       | 6.5  | 43.1 | 59.0  | 59.0  | 59.0  | 8       | 13   | 68.5  | 8       | 13   | 47.5 | 7                | 6.5  | 6       | 6     | 37.9  | 119   | 131  | 143  | 8       | 6    | 68.5 | 5       | 12   | 5                                  | 6.5       | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 36                  | 40 | 12 | 8  | 8             | 6.5  | 6       | 6.5  | 43.1 | 60.0  | 60.0  | 60.0  | 8       | 13   | 67.5  | 8       | 13   | 46.5 | 7                | 6.5  | 6       | 6     | 38.1  | 120   | 132  | 144  | 9       | 7    | 74.5 | 5       | 11.5 | 5                                  | 6         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 37                  | 41 | 12 | 8  | 8             | 6.5  | 6       | 6    | 43.3 | 61.0  | 61.0  | 61.0  | 8       | 13   | 67.0  | 8       | 13   | 46.5 | 7                | 6    | 7       | 6.5   | 41.3  | 121   | 133  | 145  | 9       | 7    | 74.5 | 5       | 8.5  | 6                                  | 8         | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 14 FT |                  |    |    |    |               |      |         |      |      |        |        |        |         |      |         |      |                  |      |         |      |      |      |      |        |         |        |      |      |           |      |      |      | HEIGHT (HT) = 10 FT OR 11 FT OR 12 FT |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|--------|--------|--------|---------|------|---------|------|------------------|------|---------|------|------|------|------|--------|---------|--------|------|------|-----------|------|------|------|---------------------------------------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |        |        |         |      |         |      | BOTTOM SLAB BARS |      |         |      |      |      |      |        |         |        |      |      | WALL BARS |      |      |      |                                       |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |        |        |        | H1 BARS |      | H2 BARS |      | A2 BARS          |      | J4 BARS |      |      |      |      |        | H3 BARS |        |      |      |           |      |      |      |                                       |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |        |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE    | SPA. | SIZE | SPA. | C4   | K3     |         |        | SIZE | SPA. | C7        | SIZE | SPA. | SIZE | SPA.                                  | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=10' | HT=11' | HT=12' |         |      |         |      |                  |      |         |      |      |      |      | HT=10' | HT=11'  | HT=12' |      |      |           |      |      |      |                                       |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15               | 12 | 8  | 10 | 6             | 8    | 5       | 7    | 69.6 | 35.0   | 35.0   | 35.0   | 6       | 16   | 138.5   | 6    | 16               | 47.0 | 5       | 6.5  | 6    | 6    | 83.9 | 128    | 140     | 152    | 6    | 6.5  | 63.5      | 5    | 12   | 5    | 9.5                                   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15               | 13 | 8  | 10 | 6             | 8    | 5       | 6.5  | 69.6 | 35.0   | 35.0   | 35.0   | 6       | 16   | 138.5   | 6    | 16               | 48.0 | 5       | 6    | 6    | 6    | 77.4 | 129    | 141     | 153    | 6    | 6.5  | 63.0      | 5    | 12   | 5    | 9.5                                   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 12               | 12 | 10 | 10 | 6             | 8    | 5       | 6    | 70.1 | 32.0   | 32.0   | 32.0   | 6       | 13   | 85.5    | 6    | 13               | 40.0 | 5       | 6    | 6    | 7    | 65.5 | 128    | 140     | 152    | 7    | 6.5  | 65.5      | 5    | 10   | 5    | 9.5                                   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 12               | 13 | 10 | 10 | 6             | 8.5  | 5       | 6    | 58.6 | 32.0   | 32.0   | 32.0   | 6       | 12   | 69.0    | 6    | 12               | 38.0 | 5       | 6    | 6    | 7    | 60.8 | 129    | 141     | 153    | 7    | 6.5  | 64.5      | 5    | 12   | 5    | 9.5                                   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 13               | 14 | 10 | 10 | 5             | 6    | 6       | 7    | 57.1 | 33.0   | 33.0   | 37.0   | 7       | 15   | 68.0    | 7    | 15               | 40.5 | 6       | 8    | 6    | 7    | 57.4 | 130    | 142     | 154    | 7    | 6.5  | 64.0      | 5    | 12   | 5    | 9                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 14               | 16 | 10 | 10 | 5             | 6    | 6       | 7    | 54.4 | 34.0   | 34.0   | 34.0   | 7       | 15   | 66.5    | 7    | 15               | 40.0 | 6       | 7    | 5    | 6    | 52.0 | 132    | 144     | 156    | 7    | 6.5  | 64.0      | 5    | 12   | 5    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 15               | 17 | 10 | 10 | 6             | 8    | 6       | 7    | 58.6 | 35.0   | 35.0   | 39.0   | 7       | 14   | 73.0    | 7    | 14               | 48.0 | 6       | 7    | 6    | 7.5  | 53.1 | 133    | 145     | 157    | 7    | 6.5  | 63.5      | 5    | 12   | 5    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 17               | 18 | 10 | 10 | 6             | 7.5  | 6       | 7    | 57.1 | 37.0   | 37.0   | 41.0   | 7       | 14   | 72.5    | 7    | 14               | 47.5 | 6       | 6.5  | 6    | 6.5  | 52.0 | 134    | 146     | 158    | 7    | 6.5  | 63.5      | 5    | 12   | 5    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 18               | 20 | 11 | 10 | 6             | 7    | 6       | 7    | 57.0 | 38.0   | 38.0   | 42.0   | 7       | 14   | 71.5    | 7    | 14               | 47.5 | 6       | 6    | 6    | 8    | 51.5 | 136    | 148     | 160    | 7    | 6.5  | 63.5      | 5    | 12   | 5    | 7.5                                   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 19               | 21 | 12 | 10 | 6             | 6.5  | 6       | 7    | 56.9 | 39.0   | 39.0   | 43.0   | 7       | 13   | 71.0    | 7    | 13               | 47.5 | 6       | 6    | 6    | 8.5  | 51.1 | 137    | 149     | 161    | 7    | 6.5  | 63.5      | 5    | 12   | 5    | 7                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 21               | 23 | 12 | 10 | 6             | 6    | 6       | 7    | 56.1 | 41.0   | 41.0   | 45.0   | 7       | 13   | 70.5    | 7    | 13               | 47.0 | 7       | 8    | 6    | 8    | 50.8 | 139    | 151     | 163    | 7    | 6.5  | 63.5      | 5    | 12   | 5    | 7                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 22               | 24 | 12 | 10 | 6             | 6    | 6       | 6.5  | 55.5 | 42.0   | 42.0   | 46.0   | 7       | 13   | 70.0    | 7    | 13               | 47.0 | 7       | 7.5  | 6    | 7.5  | 50.1 | 140    | 152     | 164    | 7    | 6.5  | 63.5      | 5    | 12   | 5    | 7                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 23               | 26 | 13 | 10 | 7             | 7    | 6       | 6.5  | 55.9 | 43.0   | 43.0   | 47.0   | 7       | 12   | 69.5    | 7    | 12               | 47.0 | 7       | 7.5  | 6    | 8.5  | 50.3 | 142    | 154     | 166    | 7    | 6.5  | 63.5      | 5    | 12   | 5    | 6.5                                   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 25               | 27 | 13 | 10 | 7             | 7    | 6       | 6.5  | 55.5 | 45.0   | 45.0   | 49.0   | 7       | 13   | 68.5    | 7    | 13               | 46.5 | 7       | 7.5  | 6    | 8    | 50.3 | 143    | 155     | 167    | 7    | 6    | 63.5      | 5    | 12   | 5    | 6.5                                   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 26               | 29 | 14 | 10 | 7             | 7    | 6       | 6.5  | 56.3 | 46.0   | 50.0   | 50.0   | 7       | 13   | 67.5    | 7    | 13               | 46.5 | 7       | 7.5  | 6    | 8.5  | 50.5 | 145    | 157     | 169    | 8    | 7.5  | 69.5      | 5    | 12   | 5    | 6                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 27               | 30 | 14 | 10 | 7             | 6.5  | 6       | 6.5  | 56.0 | 47.0   | 51.0   | 51.0   | 7       | 13   | 67.0    | 7    | 13               | 46.0 | 7       | 7    | 6    | 8    | 50.5 | 146    | 158     | 170    | 8    | 7.5  | 69.5      | 5    | 12   | 5    | 6                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 28               | 31 | 14 | 10 | 7             | 6.5  | 6       | 6.5  | 54.3 | 52.0   | 52.0   | 52.0   | 7       | 12   | 66.0    | 7    | 12               | 45.5 | 7       | 7    | 6    | 7.5  | 48.9 | 147    | 159     | 171    | 8    | 7    | 69.5      | 5    | 12   | 5    | 6                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 29               | 32 | 14 | 10 | 7             | 6    | 6       | 6    | 54.1 | 53.0   | 53.0   | 53.0   | 7       | 12   | 65.0    | 7    | 12               | 44.5 | 7       | 7    | 6    | 7.5  | 48.9 | 148    | 160     | 172    | 8    | 7    | 69.0      | 5    | 12   | 5    | 6                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 30               | 33 | 15 | 10 | 7             | 6    | 6       | 6.5  | 54.9 | 54.0   | 54.0   | 54.0   | 7       | 12   | 64.0    | 7    | 12               | 44.0 | 7       | 6    | 6    | 7    | 49.4 | 149    | 161     | 173    | 8    | 6.5  | 69.5      | 5    | 12   | 6    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 31               | 35 | 15 | 10 | 8             | 7.5  | 6       | 6    | 55.0 | 55.0   | 55.0   | 55.0   | 8       | 15   | 71.0    | 8    | 15               | 51.0 | 7       | 6.5  | 6    | 6.5  | 49.6 | 151    | 163     | 175    | 8    | 6.5  | 69.0      | 5    | 12   | 6    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 32               | 36 | 16 | 10 | 8             | 7.5  | 6       | 6    | 55.8 | 56.0   | 56.0   | 56.0   | 8       | 14   | 70.0    | 8    | 14               | 50.0 | 7       | 6.5  | 6    | 6.5  | 50.0 | 152    | 164     | 176    | 8    | 6    | 69.5      | 5    | 12   | 6    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 33               | 37 | 16 | 10 | 8             | 7    | 6       | 6    | 55.8 | 57.0   | 57.0   | 57.0   | 8       | 14   | 69.5    | 8    | 14               | 49.5 | 7       | 6.5  | 6    | 6.5  | 50.1 | 153    | 165     | 177    | 8    | 6    | 69.0      | 5    | 12   | 6    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 34               | 38 | 16 | 10 | 8             | 7    | 6       | 6    | 55.6 | 58.0   | 58.0   | 58.0   | 8       | 14   | 69.0    | 8    | 14               | 48.5 | 7       | 6.5  | 6    | 6    | 50.3 | 154    | 166     | 178    | 8    | 6    | 69.0      | 5    | 12   | 6    | 8                                     | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 35               | 39 | 17 | 10 | 8             | 7    | 6       | 6    | 56.5 | 59.0   | 59.0   | 59.0   | 8       | 13   | 68.5    | 8    | 13               | 47.5 | 7       | 6    | 6    | 6    | 50.8 | 155    | 167     | 179    | 8    | 6    | 69.0      | 5    | 12   | 6    | 7.5                                   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 35               | 40 | 17 | 10 | 8             | 6    | 7       | 7.5  | 61.5 | 59.0   | 59.0   | 59.0   | 8       | 12   | 68.5    | 8    | 12               | 48.0 | 7       | 6    | 6    | 6    | 50.8 | 156    | 168     | 180    | 9    | 7    | 75.0      | 5    | 12   | 6    | 7.5                                   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 36               | 41 | 17 | 10 | 8             | 6.5  | 7       | 7    | 61.5 | 60.0   | 60.0   | 66.0   | 8       | 13   | 68.0    | 8    | 13               | 47.5 | 7       | 6    | 7    | 8    | 53.9 | 157    | 169     | 181    | 9    | 7    | 75.0      | 5    | 12   | 6    | 7.5                                   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| SPAN (S) = 14 FT |                     |    |    |    |               |      |         |      |       |        |         |      |         |       |         |      |                  |      |      |    |         |        |         |      |         |      | HEIGHT (HT) = 13 FT OR 14 FT |      |           |    |     |    |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|-------|--------|---------|------|---------|-------|---------|------|------------------|------|------|----|---------|--------|---------|------|---------|------|------------------------------|------|-----------|----|-----|----|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |       |        |         |      |         |       |         |      | BOTTOM SLAB BARS |      |      |    |         |        |         |      |         |      |                              |      | WALL BARS |    |     |    |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |       |        | H1 BARS |      | H2 BARS |       | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |        | B1 BARS |      | B2 BARS |      |                              |      |           |    |     |    |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | T1 | SIZE          | SPA. | SIZE    | SPA. | C1    | K2     |         | SIZE | SPA.    | C5    | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | K3      |        | SIZE    | SPA. | C7      | SIZE | SPA.                         | SIZE | SPA.      | G1 |     |    |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |       | HT=13' | HT=14'  |      |         |       |         |      |                  |      |      |    | HT=13'  | HT=14' |         |      |         |      |                              |      |           |    |     |    |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15                  | 12 | 9  | 11 | 6             | 8    | 5       | 6    | 70.4  | 35.0   | 35.0    | 6    | 16      | 139.0 | 6       | 16   | 47.0             | 5    | 6    | 6  | 6       | 96.1   | 164     | 176  | 6       | 6    | 64.0                         | 5    | 12        | 5  | 8.5 | 12 |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15                  | 13 | 10 | 11 | 6             | 8    | 5       | 6    | 71.0  | 35.0   | 35.0    | 6    | 16      | 139.5 | 6       | 16   | 47.5             | 5    | 6    | 6  | 6.5     | 87.6   | 165     | 177  | 6       | 6.5  | 63.5                         | 5    | 12        | 5  | 8   | 12 |  |  |  |  |  |  |  |  |  |
| 4 FT             | 12                  | 12 | 10 | 11 | 6             | 7.5  | 6       | 7.5  | 100.0 | 36.0   | 36.0    | 6    | 13      | 94.5  | 6       | 13   | 40.0             | 5    | 6    | 6  | 6       | 77.9   | 164     | 176  | 7       | 6.5  | 65.5                         | 5    | 12        | 5  | 8   | 12 |  |  |  |  |  |  |  |  |  |
| 6 FT             | 12                  | 13 | 10 | 11 | 6             | 8    | 6       | 7    | 74.8  | 36.0   | 36.0    | 6    | 12      | 69.0  | 6       | 12   | 38.5             | 5    | 6    | 6  | 6       | 72.4   | 165     | 177  | 7       | 6.5  | 65.0                         | 5    | 12        | 5  | 8   | 12 |  |  |  |  |  |  |  |  |  |
| 8 FT             | 13                  | 14 | 11 | 11 | 5             | 6    | 6       | 7    | 68.4  | 37.0   | 37.0    | 7    | 16      | 68.0  | 7       | 16   | 41.0             | 6    | 8    | 6  | 7       | 68.4   | 166     | 178  | 7       | 6    | 64.0                         | 5    | 12        | 5  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 14                  | 16 | 11 | 11 | 5             | 6    | 6       | 6.5  | 65.4  | 38.0   | 38.0    | 7    | 15      | 66.5  | 7       | 15   | 40.5             | 6    | 7    | 6  | 6.5     | 66.8   | 168     | 180  | 7       | 6.5  | 64.0                         | 5    | 12        | 5  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 15                  | 17 | 12 | 11 | 6             | 8    | 6       | 6.5  | 69.4  | 39.0   | 39.0    | 7    | 14      | 73.0  | 7       | 14   | 48.0             | 6    | 7    | 6  | 7       | 64.6   | 169     | 181  | 7       | 6.5  | 64.0                         | 5    | 12        | 5  | 7   | 0  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 17                  | 18 | 12 | 11 | 6             | 7.5  | 6       | 6.5  | 67.9  | 41.0   | 41.0    | 7    | 15      | 72.0  | 7       | 15   | 48.0             | 6    | 6    | 6  | 6       | 63.0   | 170     | 182  | 7       | 6    | 63.5                         | 5    | 12        | 5  | 7   | 0  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 18                  | 20 | 13 | 11 | 6             | 7    | 6       | 6.5  | 66.9  | 42.0   | 42.0    | 7    | 14      | 71.5  | 7       | 14   | 47.5             | 6    | 6    | 6  | 7       | 62.1   | 172     | 184  | 7       | 6.5  | 63.5                         | 5    | 12        | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 19                  | 21 | 13 | 11 | 6             | 6.5  | 6       | 6    | 65.6  | 43.0   | 43.0    | 7    | 13      | 71.0  | 7       | 13   | 47.5             | 7    | 8    | 6  | 6       | 61.0   | 173     | 185  | 7       | 6.5  | 63.5                         | 5    | 12        | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 21                  | 23 | 14 | 11 | 6             | 6    | 6       | 6    | 65.4  | 45.0   | 45.0    | 7    | 14      | 70.0  | 7       | 14   | 47.5             | 7    | 8    | 6  | 7       | 60.6   | 175     | 187  | 7       | 6.5  | 63.5                         | 5    | 12        | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 22                  | 24 | 14 | 11 | 6             | 6    | 7       | 8    | 69.4  | 46.0   | 46.0    | 7    | 13      | 69.5  | 7       | 13   | 47.0             | 7    | 7    | 6  | 6       | 59.8   | 176     | 188  | 7       | 6.5  | 63.5                         | 5    | 12        | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 23                  | 26 | 15 | 11 | 7             | 7.5  | 7       | 8    | 69.5  | 47.0   | 47.0    | 7    | 13      | 69.0  | 7       | 13   | 47.0             | 7    | 7.5  | 6  | 7       | 59.5   | 178     | 190  | 7       | 6.5  | 63.5                         | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 24                  | 27 | 15 | 11 | 7             | 7    | 7       | 7.5  | 69.0  | 48.0   | 48.0    | 7    | 13      | 68.5  | 7       | 13   | 47.0             | 7    | 7    | 6  | 6.5     | 59.3   | 179     | 191  | 7       | 6    | 63.5                         | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 25                  | 29 | 16 | 11 | 7             | 6.5  | 7       | 7.5  | 69.5  | 49.0   | 49.0    | 7    | 13      | 67.5  | 7       | 13   | 46.5             | 7    | 7    | 6  | 7       | 59.5   | 181     | 193  | 8       | 7.5  | 69.5                         | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 27                  | 30 | 16 | 11 | 7             | 6.5  | 7       | 7    | 69.3  | 51.0   | 51.0    | 7    | 13      | 66.0  | 7       | 13   | 45.5             | 7    | 7    | 6  | 6.5     | 59.5   | 182     | 194  | 8       | 7.5  | 69.5                         | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 28                  | 31 | 16 | 11 | 7             | 6.5  | 7       | 7.5  | 67.1  | 52.0   | 52.0    | 7    | 12      | 65.0  | 7       | 12   | 44.5             | 7    | 7    | 6  | 7       | 57.1   | 183     | 195  | 8       | 7    | 69.5                         | 5    | 12        | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 29                  | 32 | 17 | 11 | 7             | 6    | 7       | 7.5  | 67.8  | 53.0   | 53.0    | 7    | 12      | 64.0  | 7       | 12   | 44.0             | 7    | 6.5  | 6  | 7       | 57.5   | 184     | 196  | 8       | 7    | 69.5                         | 5    | 12        | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 30                  | 34 | 17 | 11 | 7             | 6    | 7       | 6.5  | 67.8  | 54.0   | 54.0    | 7    | 12      | 63.0  | 7       | 12   | 43.0             | 7    | 7    | 6  | 7       | 57.6   | 186     | 198  | 8       | 6.5  | 69.5                         | 5    | 12        | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 31                  | 35 | 18 | 11 | 7             | 6    | 7       | 7    | 68.5  | 55.0   | 55.0    | 8    | 15      | 70.0  | 8       | 15   | 50.5             | 7    | 6.5  | 6  | 6.5     | 58.0   | 187     | 199  | 8       | 6.5  | 69.5                         | 5    | 12        | 6  | 7   | 0  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 32                  | 36 | 18 | 11 | 8             | 7.5  | 7       | 6.5  | 68.4  | 56.0   | 56.0    | 8    | 14      | 69.5  | 8       | 14   | 49.5             | 7    | 6.5  | 6  | 6.5     | 58.1   | 188     | 200  | 8       | 6    | 69.5                         | 5    | 12        | 6  | 7   | 0  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 33                  | 37 | 19 | 11 | 8             | 7    | 7       | 7    | 69.1  | 57.0   | 57.0    | 8    | 14      | 69.0  | 8       | 14   | 48.5             | 7    | 6.5  | 6  | 6.5     | 58.5   | 189     | 201  | 8       | 6    | 69.5                         | 5    | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 33                  | 38 | 20 | 11 | 8             | 7    | 7       | 7    | 69.9  | 57.0   | 57.0    | 8    | 14      | 69.0  | 8       | 14   | 49.0             | 7    | 6    | 6  | 6       | 58.9   | 190     | 202  | 8       | 6    | 69.5                         | 5    | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 34                  | 39 | 20 | 11 | 8             | 7    | 7       | 6    | 69.8  | 58.0   | 58.0    | 8    | 14      | 68.5  | 8       | 14   | 48.5             | 7    | 6    | 6  | 6       | 59.0   | 191     | 203  | 8       | 6    | 69.5                         | 5    | 12        | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 35                  | 41 | 21 | 11 | 8             | 6.5  | 7       | 6.5  | 70.6  | 65.0   | 65.0    | 8    | 13      | 68.0  | 8       | 13   | 47.5             | 7    | 6    | 7  | 8       | 62.5   | 193     | 205  | 9       | 7    | 75.5                         | 5    | 12        | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 36                  | 42 | 22 | 11 | 8             | 6.5  | 7       | 6.5  | 71.4  | 66.0   | 66.0    | 8    | 14      | 67.0  | 8       | 14   | 47.5             | 7    | 6    | 7  | 7.5     | 63.0   | 194     | 206  | 9       | 7    | 75.5                         | 5    | 12        | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 14 FT |                  |    |    |    |               |      |         |      |       |        |         |      |         |       |         |      |                  |      |      |    |         |        |         |      |         |      |      |      |           |    | HEIGHT (HT) = 15 FT OR 16 FT |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|-------|--------|---------|------|---------|-------|---------|------|------------------|------|------|----|---------|--------|---------|------|---------|------|------|------|-----------|----|------------------------------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |       |        |         |      |         |       |         |      | BOTTOM SLAB BARS |      |      |    |         |        |         |      |         |      |      |      | WALL BARS |    |                              |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |       |        | H1 BARS |      | H2 BARS |       | A2 BARS |      | J4 BARS          |      |      |    | H3 BARS |        | B1 BARS |      | B2 BARS |      |      |      |           |    |                              |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | T1 | SIZE          | SPA. | SIZE    | SPA. | C1    | K2     |         | SIZE | SPA.    | C5    | SIZE    | SPA. | C6               | SIZE | SPA. | C4 | K3      |        | SIZE    | SPA. | C7      | SIZE | SPA. | SIZE | SPA.      | G1 |                              |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |       | HT=15' | HT=16'  |      |         |       |         |      |                  |      |      |    | HT=15'  | HT=16' |         |      |         |      |      |      |           |    |                              |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15               | 13 | 12 | 13 | 6             | 8    | 5       | 6    | 72.6  | 35.0   | 35.0    | 6    | 16      | 141.0 | 6       | 16   | 46.0             | 5    | 6.5  | 6  | 7.5     | 102.5  | 189     | 201  | 6       | 6.5  | 64.5 | 5    | 12        | 5  | 7                            | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 15               | 13 | 12 | 13 | 6             | 8    | 6       | 8    | 75.6  | 35.0   | 39.0    | 6    | 16      | 144.0 | 6       | 16   | 47.5             | 5    | 6    | 6  | 7       | 95.8   | 189     | 201  | 6       | 6    | 63.5 | 5    | 12        | 5  | 7                            | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 12               | 12 | 12 | 13 | 6             | 8    | 6       | 7.5  | 118.3 | 36.0   | 36.0    | 6    | 13      | 86.5  | 6       | 13   | 40.0             | 5    | 6    | 6  | 6       | 86.6   | 188     | 200  | 7       | 6.5  | 65.5 | 5    | 12        | 5  | 7                            | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 12               | 13 | 12 | 13 | 5             | 6    | 6       | 7    | 86.4  | 36.0   | 36.0    | 6    | 12      | 68.0  | 6       | 12   | 39.0             | 5    | 6    | 6  | 6       | 83.0   | 189     | 201  | 7       | 6    | 65.0 | 5    | 12        | 5  | 7                            | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 13               | 15 | 13 | 13 | 5             | 6    | 6       | 7    | 78.9  | 37.0   | 37.0    | 6    | 12      | 64.5  | 6       | 12   | 38.0             | 6    | 7.5  | 6  | 6.5     | 80.3   | 191     | 203  | 7       | 6.5  | 64.5 | 5    | 12        | 5  | 6.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 14               | 16 | 13 | 13 | 5             | 6    | 6       | 6.5  | 75.0  | 38.0   | 38.0    | 7    | 15      | 66.0  | 7       | 15   | 41.0             | 6    | 7    | 6  | 6.5     | 77.3   | 192     | 204  | 7       | 6.5  | 64.5 | 5    | 12        | 5  | 6.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 15               | 17 | 14 | 13 | 6             | 8    | 6       | 6.5  | 78.5  | 39.0   | 39.0    | 7    | 15      | 73.0  | 7       | 15   | 48.5             | 6    | 6.5  | 6  | 6.5     | 74.1   | 193     | 205  | 7       | 6.5  | 64.0 | 5    | 12        | 5  | 6                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 16               | 19 | 14 | 13 | 6             | 8    | 6       | 6    | 77.0  | 40.0   | 40.0    | 7    | 14      | 72.0  | 7       | 14   | 48.5             | 6    | 6    | 6  | 6       | 73.6   | 195     | 207  | 7       | 6.5  | 64.0 | 5    | 12        | 5  | 6                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 18               | 20 | 15 | 13 | 6             | 7    | 6       | 6    | 76.5  | 42.0   | 42.0    | 7    | 14      | 71.5  | 7       | 14   | 48.5             | 6    | 6    | 6  | 6       | 72.1   | 196     | 208  | 7       | 6.5  | 64.0 | 5    | 12        | 6  | 8                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 19               | 21 | 15 | 13 | 6             | 6.5  | 7       | 7.5  | 80.5  | 43.0   | 49.0    | 7    | 14      | 71.0  | 7       | 14   | 48.5             | 7    | 8    | 7  | 7       | 74.1   | 197     | 209  | 7       | 6.5  | 64.0 | 5    | 12        | 6  | 8                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 20               | 23 | 16 | 13 | 6             | 6.5  | 7       | 7.5  | 79.9  | 44.0   | 50.0    | 7    | 13      | 70.5  | 7       | 13   | 48.0             | 7    | 7.5  | 7  | 8       | 73.8   | 199     | 211  | 7       | 6.5  | 64.0 | 5    | 12        | 6  | 8                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 22               | 25 | 17 | 13 | 6             | 6    | 7       | 7.5  | 79.8  | 46.0   | 46.0    | 7    | 14      | 69.5  | 7       | 14   | 48.0             | 7    | 7.5  | 6  | 6       | 70.5   | 201     | 213  | 7       | 6.5  | 64.0 | 5    | 12        | 6  | 7.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 23               | 26 | 18 | 13 | 7             | 7.5  | 7       | 7.5  | 79.5  | 47.0   | 47.0    | 7    | 13      | 69.0  | 7       | 13   | 47.5             | 7    | 7.5  | 6  | 6       | 69.9   | 202     | 214  | 7       | 6.5  | 64.0 | 5    | 12        | 6  | 7                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 24               | 27 | 18 | 13 | 7             | 7.5  | 7       | 7    | 79.1  | 48.0   | 48.0    | 7    | 13      | 68.5  | 7       | 13   | 47.5             | 7    | 6.5  | 6  | 6       | 69.6   | 203     | 215  | 7       | 6    | 64.0 | 5    | 12        | 6  | 7                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 25               | 29 | 19 | 13 | 7             | 7    | 7       | 7    | 79.5  | 49.0   | 49.0    | 7    | 13      | 68.0  | 7       | 13   | 47.5             | 7    | 7    | 6  | 6       | 70.0   | 205     | 217  | 8       | 7.5  | 70.0 | 5    | 12        | 6  | 6.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 26               | 30 | 20 | 13 | 7             | 6.5  | 7       | 7    | 79.8  | 50.0   | 50.0    | 7    | 13      | 67.0  | 7       | 13   | 47.0             | 7    | 6.5  | 6  | 6       | 69.9   | 206     | 218  | 8       | 7.5  | 70.0 | 5    | 12        | 6  | 6.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 27               | 31 | 20 | 13 | 7             | 6.5  | 7       | 7    | 77.4  | 51.0   | 51.0    | 7    | 13      | 66.5  | 7       | 13   | 47.0             | 7    | 6.5  | 6  | 6       | 67.5   | 207     | 219  | 8       | 7    | 70.0 | 5    | 12        | 6  | 6.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 28               | 32 | 20 | 13 | 7             | 6    | 7       | 7    | 77.4  | 52.0   | 52.0    | 7    | 12      | 65.5  | 7       | 12   | 46.0             | 7    | 6    | 6  | 6       | 67.6   | 208     | 220  | 8       | 7    | 70.0 | 5    | 12        | 6  | 6.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 29               | 34 | 21 | 13 | 7             | 6    | 7       | 7    | 78.0  | 53.0   | 53.0    | 7    | 12      | 64.5  | 7       | 12   | 45.0             | 7    | 6.5  | 6  | 6       | 68.1   | 210     | 222  | 8       | 6.5  | 70.0 | 5    | 12        | 6  | 6                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 30               | 35 | 22 | 13 | 7             | 6    | 7       | 6.5  | 78.6  | 54.0   | 60.0    | 7    | 12      | 63.5  | 7       | 12   | 44.5             | 7    | 6.5  | 7  | 7.5     | 71.4   | 211     | 223  | 8       | 6.5  | 70.0 | 5    | 12        | 6  | 6                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 31               | 36 | 22 | 13 | 8             | 7.5  | 7       | 6    | 78.6  | 61.0   | 61.0    | 8    | 15      | 71.0  | 8       | 15   | 51.5             | 7    | 6.5  | 7  | 7.5     | 71.5   | 212     | 224  | 8       | 6    | 70.0 | 5    | 12        | 6  | 6                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 32               | 37 | 23 | 13 | 8             | 7.5  | 7       | 6.5  | 79.3  | 56.0   | 62.0    | 8    | 14      | 70.0  | 8       | 14   | 51.0             | 7    | 6    | 7  | 7.5     | 71.8   | 213     | 225  | 8       | 6    | 70.0 | 5    | 12        | 7  | 7.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 33               | 39 | 24 | 13 | 8             | 7    | 7       | 6.5  | 80.0  | 57.0   | 63.0    | 8    | 14      | 70.0  | 8       | 14   | 50.0             | 7    | 6    | 7  | 7       | 72.4   | 215     | 227  | 8       | 6    | 70.0 | 5    | 12        | 7  | 7.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 34               | 40 | 25 | 13 | 8             | 7    | 7       | 6.5  | 80.6  | 58.0   | 64.0    | 8    | 14      | 69.5  | 8       | 14   | 49.0             | 7    | 6    | 7  | 7.5     | 72.6   | 216     | 228  | 9       | 7    | 76.0 | 5    | 12        | 7  | 7.5                          | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 35               | 41 | 26 | 13 | 8             | 7    | 7       | 6    | 81.4  | 65.0   | 65.0    | 8    | 14      | 68.5  | 8       | 14   | 48.5             | 7    | 6    | 7  | 7.5     | 73.0   | 217     | 229  | 9       | 7    | 76.5 | 5    | 12        | 7  | 8                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 35               | 42 | 27 | 13 | 8             | 6.5  | 7       | 6    | 82.0  | 65.0   | 65.0    | 8    | 13      | 68.5  | 8       | 13   | 48.5             | 7    | 6    | 7  | 7.5     | 73.3   | 218     | 230  | 9       | 7    | 76.5 | 5    | 12        | 7  | 8                            | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

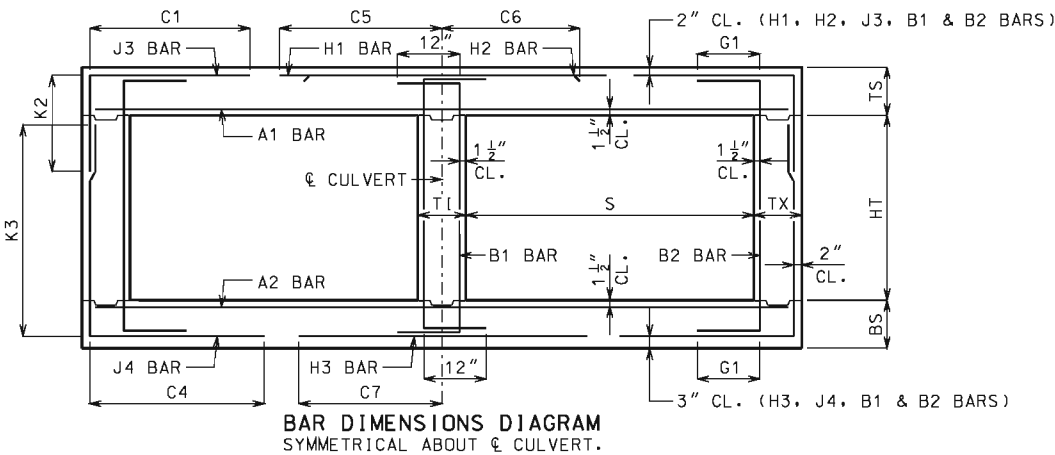


| SPAN (S) = 15 FT |                     |    |    |    |               |      |         |      |      |       |       |        |         |      |       |         |                  |      |         |      |         |      |      |       |       |        |         | HEIGHT (HT) = 8 FT OR 9 FT OR 10 FT |           |         |      |         |      |    |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|-------|--------|---------|------|-------|---------|------------------|------|---------|------|---------|------|------|-------|-------|--------|---------|-------------------------------------|-----------|---------|------|---------|------|----|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |        |         |      |       |         | BOTTOM SLAB BARS |      |         |      |         |      |      |       |       |        |         |                                     | WALL BARS |         |      |         |      |    |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |        | H1 BARS |      |       | H2 BARS |                  |      | A2 BARS |      | J4 BARS |      |      |       |       |        | H3 BARS |                                     |           | B1 BARS |      | B2 BARS |      |    |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |        | SIZE    | SPA. | C5    | SIZE    | SPA.             | C6   | SIZE    | SPA. | SIZE    | SPA. | C4   | K3    |       |        | SIZE    | SPA.                                | C7        | SIZE    | SPA. | SIZE    | SPA. | G1 |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=8' | HT=9' | HT=10' |         |      |       |         |                  |      |         |      |         |      |      | HT=8' | HT=9' | HT=10' |         |                                     |           |         |      |         |      |    |  |  |  |  |  |
| 1 FT             | 15                  | 12 | 8  | 8  | 6             | 8    | 5       | 8    | 72.9 | 35.0  | 35.0  | 35.0   | 6       | 16   | 146.0 | 6       | 16               | 51.0 | 5       | 6    | 5       | 6    | 64.9 | 104   | 116   | 128    | 6       | 6                                   | 66.5      | 5       | 12   | 5       | 12   | 12 |  |  |  |  |  |
| 2 FT             | 17                  | 13 | 8  | 8  | 6             | 7.5  | 5       | 6.5  | 72.9 | 37.0  | 37.0  | 37.0   | 6       | 14   | 146.0 | 6       | 14               | 45.5 | 5       | 6    | 5       | 6    | 57.8 | 105   | 117   | 129    | 6       | 6                                   | 65.5      | 5       | 12   | 5       | 12   | 12 |  |  |  |  |  |
| 4 FT             | 13                  | 12 | 8  | 8  | 6             | 7    | 5       | 6    | 53.1 | 33.0  | 33.0  | 33.0   | 6       | 12   | 92.5  | 6       | 12               | 41.5 | 5       | 6    | 6       | 6.5  | 53.3 | 104   | 116   | 128    | 7       | 6                                   | 68.0      | 5       | 12   | 5       | 12   | 12 |  |  |  |  |  |
| 6 FT             | 13                  | 13 | 8  | 8  | 6             | 7.5  | 6       | 7.5  | 50.4 | 33.0  | 33.0  | 37.0   | 7       | 15   | 78.5  | 7       | 15               | 42.5 | 5       | 6    | 6       | 7    | 48.9 | 105   | 117   | 129    | 7       | 6                                   | 67.0      | 5       | 12   | 5       | 12   | 12 |  |  |  |  |  |
| 8 FT             | 14                  | 15 | 8  | 8  | 6             | 8    | 5       | 6    | 44.0 | 34.0  | 34.0  | 34.0   | 7       | 14   | 72.5  | 7       | 14               | 41.5 | 6       | 7.5  | 5       | 6.5  | 42.8 | 107   | 119   | 131    | 7       | 6                                   | 67.0      | 5       | 12   | 5       | 11   | 0  |  |  |  |  |  |
| 10 FT            | 15                  | 16 | 8  | 8  | 6             | 7.5  | 6       | 8    | 50.5 | 35.0  | 35.0  | 35.0   | 7       | 13   | 78.0  | 7       | 13               | 49.0 | 6       | 7    | 5       | 6.5  | 40.9 | 108   | 120   | 132    | 7       | 6                                   | 66.5      | 5       | 12   | 5       | 10   | 0  |  |  |  |  |  |
| 12 FT            | 17                  | 18 | 8  | 8  | 6             | 7.5  | 6       | 8    | 48.4 | 37.0  | 37.0  | 37.0   | 7       | 13   | 76.5  | 7       | 13               | 48.5 | 6       | 6.5  | 5       | 6    | 39.6 | 110   | 122   | 134    | 7       | 6                                   | 66.5      | 5       | 12   | 5       | 9.5  | 0  |  |  |  |  |  |
| 14 FT            | 18                  | 19 | 8  | 8  | 6             | 7    | 6       | 7.5  | 47.0 | 38.0  | 38.0  | 42.0   | 7       | 13   | 75.5  | 7       | 13               | 48.5 | 6       | 6    | 6       | 8    | 41.5 | 111   | 123   | 135    | 7       | 6                                   | 66.5      | 5       | 12   | 5       | 9.5  | 0  |  |  |  |  |  |
| 16 FT            | 19                  | 21 | 8  | 8  | 6             | 6    | 6       | 6.5  | 46.1 | 39.0  | 43.0  | 43.0   | 7       | 12   | 75.0  | 7       | 12               | 48.0 | 6       | 6    | 6       | 7    | 40.8 | 113   | 125   | 137    | 7       | 6                                   | 66.5      | 5       | 12   | 5       | 9    | 0  |  |  |  |  |  |
| 18 FT            | 21                  | 22 | 9  | 8  | 6             | 6    | 6       | 7.5  | 46.0 | 41.0  | 41.0  | 41.0   | 7       | 12   | 74.0  | 7       | 12               | 48.0 | 7       | 7.5  | 5       | 6    | 37.8 | 114   | 126   | 138    | 7       | 6                                   | 66.0      | 5       | 12   | 5       | 8.5  | 0  |  |  |  |  |  |
| 20 FT            | 22                  | 24 | 9  | 8  | 6             | 6    | 6       | 6.5  | 45.5 | 42.0  | 42.0  | 46.0   | 7       | 12   | 73.5  | 7       | 12               | 47.5 | 7       | 7.5  | 6       | 7    | 40.3 | 116   | 128   | 140    | 7       | 6                                   | 66.0      | 5       | 12   | 5       | 8.5  | 0  |  |  |  |  |  |
| 22 FT            | 24                  | 26 | 10 | 8  | 7             | 7.5  | 6       | 7.5  | 46.0 | 44.0  | 44.0  | 44.0   | 7       | 12   | 72.5  | 7       | 12               | 47.5 | 7       | 7.5  | 5       | 6    | 37.5 | 118   | 130   | 142    | 7       | 6                                   | 66.0      | 5       | 12   | 5       | 8    | 0  |  |  |  |  |  |
| 24 FT            | 25                  | 27 | 11 | 8  | 7             | 7    | 6       | 8    | 46.5 | 45.0  | 45.0  | 45.0   | 7       | 12   | 71.5  | 7       | 12               | 47.0 | 7       | 6.5  | 5       | 6    | 37.5 | 119   | 131   | 143    | 8       | 7                                   | 72.0      | 5       | 12   | 5       | 7.5  | 0  |  |  |  |  |  |
| 26 FT            | 27                  | 29 | 11 | 8  | 7             | 6.5  | 6       | 8    | 46.1 | 47.0  | 47.0  | 51.0   | 7       | 12   | 70.5  | 7       | 12               | 47.0 | 7       | 7    | 6       | 7.5  | 40.6 | 121   | 133   | 145    | 8       | 7                                   | 72.0      | 5       | 12   | 5       | 7.5  | 0  |  |  |  |  |  |
| 28 FT            | 28                  | 30 | 11 | 8  | 7             | 6.5  | 6       | 7    | 45.9 | 52.0  | 52.0  | 52.0   | 7       | 12   | 69.5  | 7       | 12               | 46.5 | 7       | 6.5  | 6       | 7    | 40.5 | 122   | 134   | 146    | 8       | 7                                   | 72.0      | 5       | 12   | 5       | 7.5  | 0  |  |  |  |  |  |
| 30 FT            | 29                  | 32 | 12 | 8  | 7             | 6    | 6       | 7.5  | 46.9 | 53.0  | 53.0  | 53.0   | 7       | 12   | 69.0  | 7       | 12               | 46.5 | 7       | 7    | 6       | 7.5  | 41.0 | 124   | 136   | 148    | 8       | 7                                   | 72.0      | 5       | 12   | 5       | 7    | 0  |  |  |  |  |  |
| 32 FT            | 30                  | 33 | 12 | 8  | 7             | 6    | 6       | 7.5  | 45.4 | 54.0  | 54.0  | 54.0   | 7       | 12   | 67.5  | 7       | 12               | 46.0 | 7       | 6.5  | 6       | 7    | 39.5 | 125   | 137   | 149    | 8       | 6.5                                 | 72.0      | 5       | 12   | 5       | 7    | 0  |  |  |  |  |  |
| 34 FT            | 31                  | 34 | 12 | 8  | 8             | 7.5  | 6       | 7.5  | 45.3 | 55.0  | 55.0  | 55.0   | 8       | 15   | 75.0  | 8       | 15               | 53.0 | 7       | 6.5  | 6       | 7    | 39.6 | 126   | 138   | 150    | 8       | 6.5                                 | 72.0      | 5       | 12   | 5       | 7    | 0  |  |  |  |  |  |
| 36 FT            | 32                  | 36 | 12 | 8  | 8             | 7    | 6       | 7    | 45.4 | 56.0  | 56.0  | 56.0   | 8       | 14   | 73.5  | 8       | 14               | 52.5 | 7       | 6.5  | 6       | 6.5  | 39.9 | 128   | 140   | 152    | 8       | 6                                   | 72.0      | 5       | 12   | 5       | 7    | 0  |  |  |  |  |  |
| 38 FT            | 33                  | 37 | 12 | 8  | 8             | 6.5  | 6       | 6.5  | 45.4 | 57.0  | 57.0  | 57.0   | 8       | 13   | 72.5  | 8       | 13               | 51.5 | 7       | 6.5  | 6       | 6.5  | 40.0 | 129   | 141   | 153    | 8       | 6                                   | 72.0      | 5       | 12   | 5       | 6.5  | 0  |  |  |  |  |  |
| 40 FT            | 35                  | 38 | 12 | 8  | 8             | 6.5  | 6       | 6.5  | 45.1 | 59.0  | 59.0  | 59.0   | 8       | 13   | 71.0  | 8       | 13               | 49.5 | 7       | 6    | 6       | 6    | 40.3 | 130   | 142   | 154    | 8       | 6                                   | 71.5      | 5       | 12   | 5       | 6    | 0  |  |  |  |  |  |
| 42 FT            | 35                  | 39 | 13 | 8  | 8             | 6    | 6       | 6.5  | 46.1 | 59.0  | 59.0  | 59.0   | 8       | 12   | 71.0  | 8       | 12               | 50.0 | 7       | 6    | 6       | 6    | 40.6 | 131   | 143   | 155    | 8       | 6                                   | 72.0      | 5       | 12   | 5       | 6.5  | 0  |  |  |  |  |  |
| 44 FT            | 36                  | 41 | 13 | 8  | 8             | 6    | 6       | 6.5  | 46.3 | 60.0  | 60.0  | 60.0   | 8       | 12   | 70.5  | 8       | 12               | 49.0 | 7       | 6    | 7       | 7    | 43.9 | 133   | 145   | 157    | 9       | 7                                   | 77.5      | 5       | 9    | 5       | 6    | 0  |  |  |  |  |  |
| 46 FT            | 37                  | 42 | 13 | 8  | 8             | 6    | 6       | 6    | 46.3 | 61.0  | 61.0  | 61.0   | 8       | 12   | 70.0  | 8       | 12               | 48.0 | 7       | 6    | 7       | 7    | 44.1 | 134   | 146   | 158    | 9       | 7                                   | 77.5      | 5       | 6.5  | 6       | 8.5  | 0  |  |  |  |  |  |
| 48 FT            | 38                  | 43 | 13 | 9  | 8             | 6    | 6       | 6    | 46.3 | 62.0  | 62.0  | 62.0   | 8       | 12   | 70.5  | 8       | 12               | 48.5 | 7       | 6    | 7       | 6.5  | 44.3 | 135   | 147   | 159    | 9       | 7                                   | 77.5      | 5       | 12   | 6       | 8    | 0  |  |  |  |  |  |
| 50 FT            | 39                  | 44 | 14 | 9  | 8             | 6    | 6       | 6    | 47.1 | 63.0  | 63.0  | 63.0   | 8       | 12   | 70.0  | 8       | 12               | 47.5 | 8       | 7.5  | 7       | 7    | 44.8 | 136   | 148   | 160    | 9       | 6.5                                 | 77.5      | 5       | 12   | 6       | 8    | 0  |  |  |  |  |  |

| SPAN (S) = 15 FT |                     |    |    |    |               |      |         |      |      |        |         |        |         |      |         |      |                  |      |      |      |         |      |         |        |         |        |      |      |           |      |      | HEIGHT (HT) = 11 FT OR 12 FT OR 13 FT |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|--------|---------|--------|---------|------|---------|------|------------------|------|------|------|---------|------|---------|--------|---------|--------|------|------|-----------|------|------|---------------------------------------|------|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |        |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |      |         |        |         |        |      |      | WALL BARS |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |        | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |      | B1 BARS |        | B2 BARS |        |      |      |           |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | SIZE    | SPA. | C4      | K3     |         |        | SIZE | SPA. | C7        | SIZE | SPA. | SIZE                                  | SPA. | G1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=11' | HT=12'  | HT=13' |         |      |         |      |                  |      |      |      |         |      |         | HT=11' | HT=12'  | HT=13' |      |      |           |      |      |                                       |      |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15                  | 12 | 9  | 10 | 6             | 8    | 5       | 6.5  | 73.9 | 35.0   | 35.0    | 35.0   | 6       | 16   | 147.0   | 6    | 16               | 51.0 | 5    | 6    | 6       | 6    | 88.3    | 140    | 152     | 164    | 6    | 6    | 67.0      | 5    | 12   | 5                                     | 8.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 17                  | 13 | 9  | 10 | 6             | 7.5  | 5       | 6.5  | 73.9 | 37.0   | 37.0    | 37.0   | 6       | 14   | 147.0   | 6    | 14               | 46.0 | 5    | 6    | 6       | 6    | 80.4    | 141    | 153     | 165    | 6    | 6    | 66.0      | 5    | 12   | 5                                     | 8.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 13                  | 12 | 9  | 10 | 6             | 7    | 6       | 6    | 85.5 | 33.0   | 37.0    | 37.0   | 6       | 12   | 96.0    | 6    | 12               | 42.0 | 5    | 6    | 6       | 6    | 70.6    | 140    | 152     | 164    | 7    | 6    | 68.5      | 5    | 12   | 5                                     | 8.5  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 13                  | 14 | 10 | 10 | 6             | 8    | 6       | 7    | 67.4 | 33.0   | 33.0    | 37.0   | 7       | 15   | 76.5    | 7    | 15               | 43.0 | 6    | 8    | 6       | 6.5  | 66.0    | 142    | 154     | 166    | 7    | 6.5  | 68.0      | 5    | 12   | 5                                     | 8    | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 14                  | 15 | 10 | 10 | 6             | 8    | 6       | 6.5  | 62.0 | 34.0   | 34.0    | 38.0   | 7       | 14   | 72.0    | 7    | 14               | 42.0 | 6    | 7.5  | 6       | 6.5  | 62.1    | 143    | 155     | 167    | 7    | 6    | 67.0      | 5    | 12   | 5                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 15                  | 17 | 10 | 10 | 6             | 8    | 6       | 6.5  | 64.6 | 35.0   | 35.0    | 39.0   | 7       | 14   | 78.0    | 7    | 14               | 49.5 | 6    | 7    | 6       | 6.5  | 59.6    | 145    | 157     | 169    | 7    | 6.5  | 67.0      | 5    | 12   | 5                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 16                  | 18 | 11 | 10 | 6             | 7.5  | 6       | 6.5  | 62.6 | 36.0   | 36.0    | 40.0   | 7       | 13   | 76.5    | 7    | 13               | 49.0 | 6    | 6.5  | 6       | 7.5  | 57.4    | 146    | 158     | 170    | 7    | 6    | 67.0      | 5    | 12   | 5                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 18                  | 20 | 12 | 10 | 6             | 7    | 6       | 7    | 62.0 | 38.0   | 38.0    | 42.0   | 7       | 13   | 75.5    | 7    | 13               | 49.0 | 6    | 6    | 6       | 8    | 56.4    | 148    | 160     | 172    | 7    | 6.5  | 67.0      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 19                  | 21 | 12 | 10 | 6             | 6.5  | 6       | 6.5  | 60.9 | 39.0   | 39.0    | 43.0   | 7       | 13   | 74.5    | 7    | 13               | 48.5 | 7    | 8    | 6       | 7.5  | 55.4    | 149    | 161     | 173    | 7    | 6    | 66.5      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 21                  | 22 | 12 | 10 | 6             | 6    | 6       | 6.5  | 59.8 | 41.0   | 45.0    | 45.0   | 7       | 13   | 74.0    | 7    | 13               | 48.5 | 7    | 7    | 6       | 6    | 54.6    | 150    | 162     | 174    | 7    | 6    | 66.5      | 5    | 12   | 5                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 22                  | 24 | 13 | 10 | 6             | 6    | 6       | 6.5  | 59.9 | 42.0   | 42.0    | 46.0   | 7       | 12   | 73.5    | 7    | 12               | 48.5 | 7    | 7    | 6       | 7.5  | 54.4    | 152    | 164     | 176    | 7    | 6    | 66.5      | 5    | 12   | 5                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 23                  | 26 | 13 | 10 | 7             | 7    | 6       | 6    | 59.3 | 43.0   | 43.0    | 47.0   | 7       | 12   | 72.5    | 7    | 12               | 48.0 | 7    | 7    | 6       | 7    | 53.9    | 154    | 166     | 178    | 7    | 6    | 66.5      | 5    | 12   | 5                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 25                  | 28 | 14 | 10 | 7             | 7    | 6       | 6    | 59.5 | 45.0   | 45.0    | 49.0   | 7       | 12   | 71.5    | 7    | 12               | 48.0 | 7    | 7    | 6       | 7.5  | 54.0    | 156    | 168     | 180    | 7    | 6    | 66.5      | 5    | 12   | 5                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 26                  | 29 | 14 | 10 | 7             | 6.5  | 6       | 6    | 59.0 | 50.0   | 50.0    | 50.0   | 7       | 12   | 71.0    | 7    | 12               | 47.5 | 7    | 7    | 6       | 7.5  | 53.6    | 157    | 169     | 181    | 8    | 7    | 72.5      | 5    | 12   | 5                                     | 6    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 27                  | 31 | 15 | 10 | 7             | 6    | 6       | 6    | 59.6 | 51.0   | 51.0    | 51.0   | 7       | 12   | 70.5    | 7    | 12               | 47.5 | 7    | 7    | 6       | 7.5  | 53.9    | 159    | 171     | 183    | 8    | 7    | 72.5      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 29                  | 32 | 15 | 10 | 7             | 6    | 7       | 8    | 64.3 | 53.0   | 53.0    | 53.0   | 7       | 12   | 69.0    | 7    | 12               | 47.0 | 7    | 6.5  | 6       | 7.5  | 54.0    | 160    | 172     | 184    | 8    | 7    | 72.5      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 30                  | 33 | 16 | 10 | 7             | 6    | 6       | 6    | 59.9 | 54.0   | 54.0    | 54.0   | 7       | 12   | 68.0    | 7    | 12               | 46.5 | 7    | 6    | 6       | 7    | 54.3    | 161    | 173     | 185    | 8    | 6.5  | 72.5      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 31                  | 35 | 16 | 10 | 8             | 7.5  | 6       | 6    | 58.3 | 55.0   | 55.0    | 55.0   | 8       | 15   | 75.0    | 8    | 15               | 53.0 | 7    | 6.5  | 6       | 6.5  | 52.6    | 163    | 175     | 187    | 8    | 6.5  | 72.5      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 32                  | 36 | 16 | 10 | 8             | 7.5  | 7       | 7.5  | 63.1 | 56.0   | 56.0    | 56.0   | 8       | 14   | 74.0    | 8    | 14               | 52.5 | 7    | 6.5  | 6       | 6.5  | 52.8    | 164    | 176     | 188    | 8    | 6    | 72.5      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 33                  | 37 | 16 | 10 | 8             | 7    | 7       | 7    | 63.1 | 57.0   | 57.0    | 57.0   | 8       | 14   | 72.5    | 8    | 14               | 52.0 | 7    | 6    | 6       | 6.5  | 52.9    | 165    | 177     | 189    | 8    | 6    | 72.5      | 5    | 12   | 6                                     | 8    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 34                  | 38 | 17 | 10 | 8             | 7    | 7       | 7.5  | 63.9 | 58.0   | 58.0    | 58.0   | 8       | 14   | 72.0    | 8    | 14               | 51.0 | 7    | 6    | 6       | 6    | 53.3    | 166    | 178     | 190    | 8    | 6    | 72.5      | 5    | 12   | 6                                     | 7.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 35                  | 40 | 18 | 10 | 8             | 6.5  | 7       | 7.5  | 64.8 | 59.0   | 59.0    | 59.0   | 8       | 13   | 71.5    | 8    | 13               | 50.0 | 7    | 6    | 6       | 6    | 53.8    | 168    | 180     | 192    | 9    | 7    | 78.5      | 5    | 12   | 6                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 36                  | 41 | 18 | 10 | 8             | 6.5  | 7       | 7.5  | 64.6 | 60.0   | 60.0    | 66.0   | 8       | 13   | 71.0    | 8    | 13               | 49.5 | 7    | 6    | 7       | 8    | 56.9    | 169    | 181     | 193    | 9    | 7    | 78.5      | 5    | 12   | 6                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 37                  | 42 | 18 | 10 | 8             | 6.5  | 7       | 6.5  | 64.6 | 61.0   | 61.0    | 67.0   | 8       | 12   | 70.5    | 8    | 12               | 48.5 | 7    | 6    | 7       | 7.5  | 57.0    | 170    | 182     | 194    | 9    | 7    | 78.5      | 5    | 12   | 6                                     | 7    | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 38                  | 43 | 19 | 10 | 8             | 6    | 7       | 7    | 65.4 | 62.0   | 62.0    | 68.0   | 8       | 13   | 69.5    | 8    | 13               | 48.0 | 8    | 7.5  | 7       | 7.5  | 57.5    | 171    | 183     | 195    | 9    | 7    | 78.5      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 39                  | 44 | 19 | 10 | 8             | 6    | 7       | 6.5  | 65.3 | 63.0   | 63.0    | 69.0   | 8       | 13   | 69.0    | 8    | 13               | 47.5 | 8    | 7.5  | 7       | 7    | 57.6    | 172    | 184     | 196    | 9    | 6.5  | 78.5      | 5    | 12   | 6                                     | 6.5  | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



| SPAN (S) = 15 FT |                     |    |    |    |               |      |         |      |       |        |         |        |         |      |         |       |                  |      |      |      |         |        |         |        |         |      |     |      |           |      |      | HEIGHT (HT) = 14 FT OR 15 FT OR 16 FT |     |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|-------|--------|---------|--------|---------|------|---------|-------|------------------|------|------|------|---------|--------|---------|--------|---------|------|-----|------|-----------|------|------|---------------------------------------|-----|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |       |        |         |        |         |      |         |       | BOTTOM SLAB BARS |      |      |      |         |        |         |        |         |      |     |      | WALL BARS |      |      |                                       |     |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |       |        | H1 BARS |        | H2 BARS |      | A2 BARS |       | J4 BARS          |      |      |      | H3 BARS |        | B1 BARS |        | B2 BARS |      |     |      |           |      |      |                                       |     |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1    | K2     |         |        | SIZE    | SPA. | C5      | SIZE  | SPA.             | C6   | SIZE | SPA. | C4      | K3     |         |        | SIZE    | SPA. | C7  | SIZE | SPA.      | SIZE | SPA. | G1                                    |     |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |       | HT=14' | HT=15'  | HT=16' |         |      |         |       |                  |      |      |      |         | HT=14' | HT=15'  | HT=16' |         |      |     |      |           |      |      |                                       |     |    |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15                  | 13 | 12 | 13 | 6             | 8    | 5       | 6    | 8.5   | 79.3   | 35.0    | 35.0   | 39.0    | 6    | 16      | 152.5 | 6                | 16   | 50.0 | 5    | 6       | 6      | 7       | 102.4  | 177     | 189  | 201 | 6    | 6         | 67.5 | 5    | 11                                    | 5   | 7  | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 16                  | 14 | 12 | 13 | 6             | 7.5  | 5       | 6    | 76.3  | 36.0   | 36.0    | 36.0   | 6       | 15   | 149.5   | 6     | 15               | 48.5 | 6    | 8    | 6       | 7.5    | 96.3    | 178    | 190     | 202  | 6   | 6    | 67.0      | 5    | 12   | 5                                     | 7   | 12 |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 12                  | 13 | 12 | 13 | 6             | 7    | 6       | 7    | 101.4 | 36.0   | 36.0    | 36.0   | 6       | 12   | 86.5    | 6     | 12               | 41.5 | 5    | 6    | 6       | 6.5    | 88.5    | 177    | 189     | 201  | 7   | 6.5  | 69.0      | 5    | 10.5 | 5                                     | 7   | 12 |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 13                  | 14 | 12 | 13 | 6             | 8    | 6       | 6.5  | 86.3  | 37.0   | 37.0    | 37.0   | 7       | 16   | 74.5    | 7     | 16               | 43.5 | 6    | 8    | 6       | 6.5    | 82.9    | 178    | 190     | 202  | 7   | 6    | 68.0      | 5    | 12   | 5                                     | 7   | 12 |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 13                  | 15 | 13 | 13 | 6             | 8    | 6       | 6.5  | 76.4  | 37.0   | 37.0    | 37.0   | 7       | 14   | 70.5    | 7     | 14               | 42.5 | 6    | 7.5  | 6       | 6.5    | 77.9    | 179    | 191     | 203  | 7   | 6    | 68.0      | 5    | 12   | 5                                     | 6.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 15                  | 17 | 13 | 13 | 6             | 8    | 6       | 6    | 80.6  | 39.0   | 39.0    | 39.0   | 7       | 14   | 77.5    | 7     | 14               | 50.5 | 6    | 7    | 6       | 6.5    | 76.0    | 181    | 193     | 205  | 7   | 6.5  | 67.5      | 5    | 12   | 5                                     | 6.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 16                  | 18 | 14 | 13 | 6             | 8    | 6       | 6    | 78.4  | 40.0   | 40.0    | 40.0   | 7       | 14   | 76.5    | 7     | 14               | 50.0 | 6    | 6.5  | 6       | 6.5    | 73.8    | 182    | 194     | 206  | 7   | 6    | 67.5      | 5    | 12   | 5                                     | 6   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 17                  | 20 | 14 | 13 | 6             | 7.5  | 7       | 7.5  | 81.6  | 41.0   | 41.0    | 41.0   | 7       | 13   | 75.5    | 7     | 13               | 50.0 | 6    | 6    | 6       | 6      | 72.9    | 184    | 196     | 208  | 7   | 6    | 67.5      | 5    | 12   | 5                                     | 6   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 19                  | 21 | 15 | 13 | 6             | 6.5  | 7       | 8    | 80.9  | 43.0   | 43.0    | 49.0   | 7       | 13   | 75.0    | 7     | 13               | 49.5 | 7    | 8    | 7       | 8      | 74.4    | 185    | 197     | 209  | 7   | 6    | 67.0      | 5    | 12   | 6                                     | 8   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 20                  | 23 | 16 | 13 | 6             | 6.5  | 7       | 8    | 80.1  | 44.0   | 44.0    | 44.0   | 7       | 13   | 74.0    | 7     | 13               | 49.5 | 7    | 7.5  | 6       | 6      | 70.8    | 187    | 199     | 211  | 7   | 6    | 67.0      | 5    | 12   | 6                                     | 8   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 21                  | 24 | 17 | 13 | 6             | 6    | 7       | 7.5  | 79.5  | 45.0   | 45.0    | 45.0   | 7       | 12   | 73.5    | 7     | 12               | 49.5 | 7    | 7    | 6       | 6      | 69.8    | 188    | 200     | 212  | 7   | 6    | 67.0      | 5    | 12   | 6                                     | 7.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 23                  | 26 | 17 | 13 | 7             | 7.5  | 7       | 7.5  | 78.9  | 47.0   | 47.0    | 47.0   | 7       | 12   | 73.0    | 7     | 12               | 49.0 | 7    | 7    | 6       | 6      | 69.4    | 190    | 202     | 214  | 7   | 6    | 67.0      | 5    | 12   | 6                                     | 7.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 24                  | 28 | 18 | 13 | 7             | 7    | 7       | 7.5  | 78.6  | 48.0   | 48.0    | 48.0   | 7       | 12   | 72.5    | 7     | 12               | 49.0 | 7    | 7    | 6       | 6.5    | 69.0    | 192    | 204     | 216  | 7   | 6    | 67.0      | 5    | 12   | 6                                     | 7   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 26                  | 29 | 18 | 13 | 7             | 7    | 7       | 7    | 78.1  | 50.0   | 50.0    | 50.0   | 7       | 12   | 71.5    | 7     | 12               | 49.0 | 7    | 6    | 6       | 6      | 68.5    | 193    | 205     | 217  | 8   | 7    | 73.0      | 5    | 12   | 6                                     | 7   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 27                  | 31 | 19 | 13 | 7             | 6.5  | 7       | 7    | 78.5  | 51.0   | 51.0    | 51.0   | 7       | 12   | 71.0    | 7     | 12               | 48.5 | 7    | 6.5  | 6       | 6      | 68.6    | 195    | 207     | 219  | 8   | 7    | 73.0      | 5    | 12   | 6                                     | 6.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 28                  | 32 | 19 | 13 | 7             | 6    | 7       | 6    | 78.1  | 52.0   | 52.0    | 52.0   | 7       | 12   | 70.5    | 7     | 12               | 48.5 | 7    | 6.5  | 6       | 6      | 68.5    | 196    | 208     | 220  | 8   | 7    | 73.0      | 5    | 12   | 6                                     | 6.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 30                  | 34 | 20 | 13 | 7             | 6    | 7       | 6.5  | 78.8  | 54.0   | 54.0    | 54.0   | 7       | 12   | 69.0    | 7     | 12               | 47.0 | 7    | 6.5  | 6       | 6      | 68.9    | 198    | 210     | 222  | 8   | 6.5  | 73.0      | 5    | 12   | 6                                     | 6.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 31                  | 35 | 20 | 13 | 7             | 6    | 7       | 6.5  | 76.3  | 55.0   | 55.0    | 55.0   | 8       | 15   | 76.0    | 8     | 15               | 54.0 | 7    | 6.5  | 6       | 6      | 66.4    | 199    | 211     | 223  | 8   | 6.5  | 73.0      | 5    | 12   | 6                                     | 6.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 32                  | 36 | 21 | 13 | 8             | 7.5  | 7       | 6.5  | 76.8  | 56.0   | 56.0    | 56.0   | 8       | 14   | 75.0    | 8     | 14               | 53.5 | 7    | 6    | 6       | 6      | 66.6    | 200    | 212     | 224  | 8   | 6    | 73.0      | 5    | 12   | 6                                     | 6   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 33                  | 37 | 21 | 13 | 8             | 7    | 7       | 6    | 76.8  | 57.0   | 57.0    | 57.0   | 8       | 14   | 74.0    | 8     | 14               | 53.0 | 7    | 6    | 6       | 6      | 66.6    | 201    | 213     | 225  | 8   | 6    | 73.0      | 5    | 12   | 6                                     | 6   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 34                  | 39 | 22 | 13 | 8             | 7    | 7       | 6    | 77.5  | 58.0   | 58.0    | 64.0   | 8       | 14   | 73.0    | 8     | 14               | 52.0 | 7    | 6    | 7       | 7.5    | 70.1    | 203    | 215     | 227  | 8   | 6    | 73.0      | 5    | 12   | 6                                     | 6   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 35                  | 40 | 23 | 13 | 8             | 7    | 7       | 6.5  | 78.1  | 59.0   | 59.0    | 65.0   | 8       | 13   | 72.5    | 8     | 13               | 51.0 | 7    | 6    | 7       | 7.5    | 70.4    | 204    | 216     | 228  | 9   | 7    | 79.0      | 5    | 12   | 7                                     | 7.5 | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 35                  | 41 | 24 | 13 | 8             | 6    | 7       | 6    | 78.9  | 65.0   | 65.0    | 65.0   | 8       | 12   | 72.5    | 8     | 12               | 52.0 | 8    | 7.5  | 7       | 7      | 70.6    | 205    | 217     | 229  | 9   | 7    | 79.5      | 5    | 12   | 7                                     | 8   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 36                  | 42 | 25 | 13 | 8             | 6    | 7       | 6    | 79.5  | 66.0   | 66.0    | 66.0   | 8       | 12   | 72.0    | 8     | 12               | 51.0 | 8    | 7    | 7       | 7.5    | 70.9    | 206    | 218     | 230  | 9   | 7    | 79.5      | 5    | 12   | 7                                     | 8   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 37                  | 43 | 26 | 13 | 8             | 6.5  | 7       | 6    | 80.3  | 67.0   | 67.0    | 67.0   | 8       | 12   | 71.5    | 8     | 12               | 50.0 | 8    | 6.5  | 7       | 7.5    | 71.3    | 207    | 219     | 231  | 9   | 7    | 79.5      | 5    | 12   | 7                                     | 8   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 38                  | 45 | 27 | 13 | 8             | 6    | 7       | 6    | 81.1  | 68.0   | 68.0    | 68.0   | 8       | 12   | 71.0    | 8     | 12               | 49.0 | 8    | 7    | 7       | 7      | 71.8    | 209    | 221     | 233  | 9   | 6.5  | 79.5      | 5    | 12   | 7                                     | 8   | 0  |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**CONCRETE  
DOUBLE BOX CULVERT**  
MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS  
SPAN (S): 15 FEET  
HEIGHT (HT): 14 THRU 16 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

**703.47**

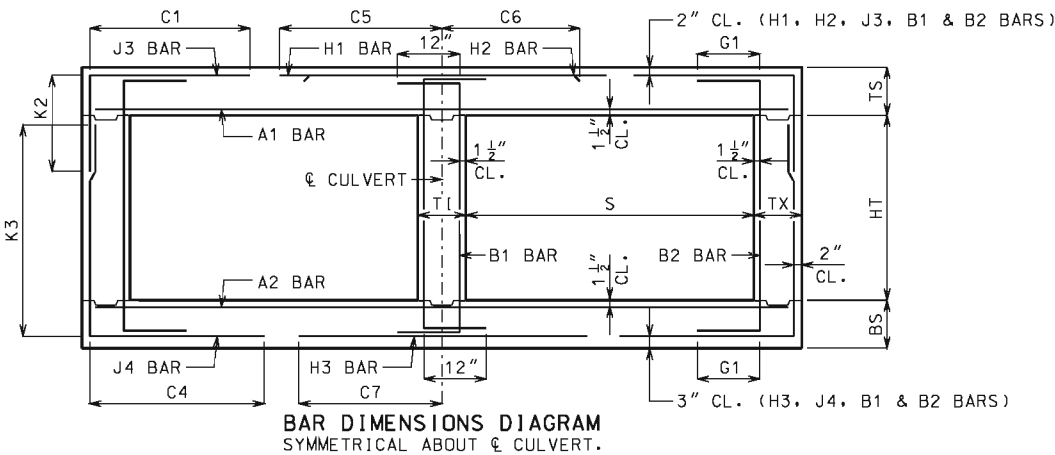
SHEET NO.  
25 OF 27

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

| SPAN (S) = 16 FT |                     |    |    |    |               |      |         |      |      |       |       |        |         |      |         |      |                  |      |         |      |    |       |       |        |         |      |    | HEIGHT (HT) = 8 FT OR 9 FT OR 10 FT |           |         |      |    |     |    |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|-------|-------|--------|---------|------|---------|------|------------------|------|---------|------|----|-------|-------|--------|---------|------|----|-------------------------------------|-----------|---------|------|----|-----|----|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |       |       |        |         |      |         |      | BOTTOM SLAB BARS |      |         |      |    |       |       |        |         |      |    |                                     | WALL BARS |         |      |    |     |    |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |       |       |        | H1 BARS |      | H2 BARS |      | A2 BARS          |      | J4 BARS |      |    |       |       |        | H3 BARS |      |    | B1 BARS                             |           | B2 BARS |      |    |     |    |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2    |       |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE    | SPA. | C4 | K3    |       |        | SIZE    | SPA. | C7 | SIZE                                | SPA.      | SIZE    | SPA. | G1 |     |    |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=8' | HT=9' | HT=10' |         |      |         |      |                  |      |         |      |    | HT=8' | HT=9' | HT=10' |         |      |    |                                     |           |         |      |    |     |    |  |  |  |  |  |
| 1 FT             | 15                  | 12 | 8  | 8  | 6             | 7.5  | 5       | 8    | 76.5 | 35.0  | 35.0  | 35.0   | 6       | 15   | 154.5   | 6    | 15               | 54.0 | 5       | 6    | 6  | 7     | 66.9  | 104    | 116     | 128  | 7  | 7                                   | 72.5      | 5       | 12   | 5  | 12  | 12 |  |  |  |  |  |
| 2 FT             | 17                  | 13 | 8  | 8  | 6             | 7    | 5       | 6.5  | 76.5 | 37.0  | 37.0  | 37.0   | 6       | 14   | 154.5   | 6    | 14               | 50.0 | 5       | 6    | 5  | 6     | 56.4  | 105    | 117     | 129  | 7  | 7                                   | 71.5      | 5       | 12   | 5  | 12  | 12 |  |  |  |  |  |
| 4 FT             | 13                  | 13 | 8  | 8  | 6             | 6.5  | 6       | 7    | 55.6 | 33.0  | 33.0  | 33.0   | 7       | 14   | 97.0    | 7    | 14               | 45.5 | 5       | 6    | 5  | 6     | 49.6  | 105    | 117     | 129  | 7  | 6                                   | 71.0      | 5       | 12   | 5  | 12  | 12 |  |  |  |  |  |
| 6 FT             | 14                  | 14 | 8  | 8  | 6             | 7    | 5       | 6    | 47.1 | 34.0  | 34.0  | 34.0   | 7       | 14   | 82.0    | 7    | 14               | 44.0 | 6       | 8    | 5  | 6     | 45.1  | 106    | 118     | 130  | 7  | 6                                   | 70.5      | 5       | 12   | 5  | 12  | 12 |  |  |  |  |  |
| 8 FT             | 15                  | 16 | 8  | 8  | 6             | 7.5  | 5       | 6    | 48.4 | 35.0  | 35.0  | 35.0   | 7       | 13   | 84.0    | 7    | 13               | 51.0 | 6       | 7    | 5  | 7     | 41.9  | 108    | 120     | 132  | 7  | 6                                   | 70.0      | 5       | 12   | 5  | 11  | 0  |  |  |  |  |  |
| 10 FT            | 16                  | 17 | 8  | 8  | 6             | 7    | 6       | 8    | 49.6 | 36.0  | 36.0  | 36.0   | 7       | 12   | 81.5    | 7    | 12               | 50.5 | 6       | 7    | 5  | 6.5   | 39.9  | 109    | 121     | 133  | 7  | 6                                   | 69.5      | 5       | 12   | 5  | 10  | 0  |  |  |  |  |  |
| 12 FT            | 18                  | 19 | 8  | 8  | 6             | 7    | 6       | 7.5  | 47.5 | 38.0  | 38.0  | 38.0   | 7       | 12   | 80.0    | 7    | 12               | 50.0 | 6       | 6    | 5  | 6     | 38.6  | 111    | 123     | 135  | 7  | 6                                   | 69.5      | 5       | 12   | 5  | 9.5 | 0  |  |  |  |  |  |
| 14 FT            | 19                  | 20 | 8  | 8  | 6             | 6.5  | 6       | 7    | 46.0 | 39.0  | 39.0  | 43.0   | 7       | 12   | 79.0    | 7    | 12               | 49.5 | 6       | 6    | 6  | 7.5   | 40.5  | 112    | 124     | 136  | 7  | 6                                   | 69.5      | 5       | 12   | 5  | 9.5 | 0  |  |  |  |  |  |
| 16 FT            | 21                  | 22 | 8  | 8  | 6             | 6    | 6       | 7    | 44.9 | 45.0  | 45.0  | 45.0   | 7       | 12   | 78.0    | 7    | 12               | 49.5 | 7       | 7.5  | 6  | 7     | 39.9  | 114    | 126     | 138  | 7  | 6                                   | 69.5      | 5       | 12   | 5  | 8.5 | 0  |  |  |  |  |  |
| 18 FT            | 22                  | 23 | 9  | 8  | 6             | 6    | 6       | 7.5  | 45.1 | 42.0  | 42.0  | 42.0   | 8       | 15   | 85.0    | 8    | 15               | 57.0 | 7       | 6.5  | 5  | 6     | 36.8  | 115    | 127     | 139  | 8  | 6.5                                 | 75.5      | 5       | 12   | 5  | 8.5 | 0  |  |  |  |  |  |
| 20 FT            | 24                  | 25 | 9  | 8  | 7             | 7.5  | 6       | 7    | 44.4 | 48.0  | 48.0  | 48.0   | 8       | 15   | 84.0    | 8    | 15               | 57.0 | 7       | 7    | 6  | 7     | 39.4  | 117    | 129     | 141  | 8  | 7                                   | 75.5      | 5       | 12   | 5  | 8.5 | 0  |  |  |  |  |  |
| 22 FT            | 25                  | 27 | 10 | 8  | 7             | 7    | 6       | 7.5  | 45.0 | 45.0  | 45.0  | 49.0   | 8       | 14   | 83.5    | 8    | 14               | 56.5 | 7       | 6.5  | 6  | 7     | 39.5  | 119    | 131     | 143  | 8  | 7                                   | 75.5      | 5       | 12   | 5  | 8   | 0  |  |  |  |  |  |
| 24 FT            | 27                  | 29 | 10 | 8  | 7             | 6.5  | 6       | 6.5  | 44.5 | 51.0  | 51.0  | 51.0   | 8       | 14   | 82.5    | 8    | 14               | 56.5 | 7       | 6.5  | 6  | 6.5   | 39.3  | 121    | 133     | 145  | 8  | 7                                   | 75.0      | 5       | 12   | 5  | 8   | 0  |  |  |  |  |  |
| 26 FT            | 28                  | 31 | 11 | 8  | 7             | 6    | 6       | 7.5  | 45.3 | 52.0  | 52.0  | 52.0   | 8       | 14   | 81.5    | 8    | 14               | 56.0 | 7       | 6.5  | 6  | 7     | 39.5  | 123    | 135     | 147  | 8  | 7                                   | 75.0      | 5       | 12   | 5  | 7.5 | 0  |  |  |  |  |  |
| 28 FT            | 30                  | 32 | 11 | 8  | 7             | 6    | 6       | 7    | 44.9 | 54.0  | 54.0  | 54.0   | 8       | 14   | 80.5    | 8    | 14               | 56.0 | 7       | 6.5  | 6  | 6.5   | 39.6  | 124    | 136     | 148  | 8  | 7                                   | 75.0      | 5       | 12   | 5  | 7.5 | 0  |  |  |  |  |  |
| 30 FT            | 31                  | 34 | 11 | 8  | 8             | 7.5  | 6       | 6    | 44.9 | 55.0  | 55.0  | 55.0   | 8       | 14   | 79.5    | 8    | 14               | 55.5 | 7       | 6.5  | 6  | 6     | 39.6  | 126    | 138     | 150  | 8  | 6.5                                 | 75.0      | 5       | 12   | 5  | 7   | 0  |  |  |  |  |  |
| 32 FT            | 32                  | 35 | 12 | 8  | 8             | 7    | 6       | 7    | 45.8 | 56.0  | 56.0  | 56.0   | 8       | 14   | 78.5    | 8    | 14               | 55.0 | 7       | 6    | 6  | 6.5   | 40.0  | 127    | 139     | 151  | 8  | 6.5                                 | 75.0      | 5       | 12   | 5  | 7   | 0  |  |  |  |  |  |
| 34 FT            | 33                  | 36 | 12 | 8  | 8             | 7    | 6       | 7    | 45.3 | 57.0  | 57.0  | 57.0   | 8       | 14   | 77.5    | 8    | 14               | 54.5 | 7       | 6    | 6  | 6.5   | 39.3  | 128    | 140     | 152  | 8  | 6                                   | 75.0      | 5       | 12   | 5  | 7   | 0  |  |  |  |  |  |
| 36 FT            | 35                  | 38 | 12 | 8  | 8             | 6.5  | 6       | 6.5  | 45.3 | 59.0  | 59.0  | 59.0   | 8       | 13   | 75.0    | 8    | 13               | 52.0 | 7       | 6    | 6  | 6     | 39.3  | 130    | 142     | 154  | 8  | 6                                   | 75.0      | 5       | 12   | 5  | 7   | 0  |  |  |  |  |  |
| 38 FT            | 36                  | 39 | 12 | 8  | 8             | 6.5  | 6       | 6.5  | 45.3 | 60.0  | 60.0  | 60.0   | 8       | 13   | 74.0    | 8    | 13               | 51.5 | 7       | 6    | 6  | 6     | 39.3  | 131    | 143     | 155  | 8  | 6                                   | 75.0      | 5       | 12   | 5  | 6.5 | 0  |  |  |  |  |  |
| 40 FT            | 37                  | 41 | 12 | 8  | 8             | 6.5  | 6       | 6    | 45.3 | 61.0  | 61.0  | 61.0   | 8       | 12   | 73.5    | 8    | 12               | 50.5 | 7       | 6    | 7  | 6.5   | 42.5  | 133    | 145     | 157  | 9  | 7                                   | 80.5      | 5       | 11   | 5  | 6   | 0  |  |  |  |  |  |
| 42 FT            | 38                  | 42 | 12 | 8  | 8             | 6    | 6       | 6    | 45.3 | 62.0  | 62.0  | 62.0   | 8       | 12   | 73.0    | 8    | 12               | 50.0 | 7       | 6    | 7  | 6     | 42.6  | 134    | 146     | 158  | 9  | 7                                   | 80.5      | 5       | 7    | 6  | 8   | 0  |  |  |  |  |  |
| 44 FT            | 39                  | 43 | 13 | 9  | 8             | 6    | 6       | 6    | 45.8 | 63.0  | 63.0  | 63.0   | 8       | 12   | 73.5    | 8    | 12               | 50.5 | 8       | 7.5  | 7  | 6.5   | 43.1  | 135    | 147     | 159  | 9  | 7                                   | 81.0      | 5       | 12   | 5  | 6   | 0  |  |  |  |  |  |
| 46 FT            | 40                  | 44 | 13 | 9  | 8             | 6    | 7       | 7    | 50.8 | 70.0  | 70.0  | 70.0   | 8       | 12   | 73.0    | 8    | 12               | 49.5 | 8       | 7.5  | 7  | 6.5   | 43.4  | 136    | 148     | 160  | 9  | 6.5                                 | 80.5      | 5       | 12   | 6  | 8   | 0  |  |  |  |  |  |
| 48 FT            | 41                  | 45 | 13 | 9  | 9             | 7.5  | 7       | 7    | 50.8 | 71.0  | 71.0  | 71.0   | 9       | 15   | 80.5    | 9    | 15               | 56.5 | 8       | 7    | 7  | 6.5   | 43.5  | 137    | 149     | 161  | 9  | 6.5                                 | 80.5      | 5       | 12   | 6  | 7.5 | 0  |  |  |  |  |  |
| 50 FT            | 42                  | 46 | 13 | 9  | 9             | 7    | 7       | 6.5  | 50.8 | 72.0  | 72.0  | 72.0   | 9       | 14   | 80.0    | 9    | 14               | 56.0 | 8       | 7    | 7  | 6     | 43.8  | 138    | 150     | 162  | 9  | 6.5                                 | 80.5      | 5       | 9.5  | 6  | 7   | 0  |  |  |  |  |  |

| SPAN (S) = 16 FT |                     |    |    |    |               |      |         |      |      |        |        |        |         |      |         |      |                  |      |         |      |    |        |        |        |         |      |         |      |           |      |      | HEIGHT (HT) = 11 FT OR 12 FT OR 13 FT |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|---------------------|----|----|----|---------------|------|---------|------|------|--------|--------|--------|---------|------|---------|------|------------------|------|---------|------|----|--------|--------|--------|---------|------|---------|------|-----------|------|------|---------------------------------------|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN<br>FILL   | MEMBER<br>THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |        |        |         |      |         |      | BOTTOM SLAB BARS |      |         |      |    |        |        |        |         |      |         |      | WALL BARS |      |      |                                       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    | A1 BARS       |      | J3 BARS |      |      |        |        |        | H1 BARS |      | H2 BARS |      | A2 BARS          |      | J4 BARS |      |    |        |        |        | H3 BARS |      | B1 BARS |      | B2 BARS   |      |      |                                       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS                  | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |        |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE    | SPA. | C4 | K3     |        |        | SIZE    | SPA. | C7      | SIZE | SPA.      | SIZE | SPA. | G1                                    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                     |    |    |    |               |      |         |      |      | HT=11' | HT=12' | HT=13' |         |      |         |      |                  |      |         |      |    | HT=11' | HT=12' | HT=13' |         |      |         |      |           |      |      |                                       |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15                  | 13 | 9  | 10 | 6             | 7.5  | 5       | 6    | 77.5 | 35.0   | 35.0   | 35.0   | 6       | 15   | 155.5   | 6    | 15               | 53.5 | 5       | 6    | 6  | 6      | 89.5   | 141    | 153     | 165  | 6       | 6    | 70.0      | 5    | 11.5 | 5                                     | 8.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 17                  | 14 | 9  | 10 | 6             | 7.5  | 5       | 6.5  | 77.5 | 37.0   | 37.0   | 37.0   | 6       | 14   | 155.5   | 6    | 14               | 50.0 | 6       | 8    | 6  | 6.5    | 79.8   | 142    | 154     | 166  | 6       | 6    | 69.5      | 5    | 12   | 5                                     | 8.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 13                  | 13 | 10 | 10 | 6             | 6.5  | 6       | 7    | 76.9 | 33.0   | 37.0   | 37.0   | 7       | 15   | 96.5    | 7    | 15               | 46.0 | 5       | 6    | 6  | 6.5    | 70.0   | 141    | 153     | 165  | 7       | 6    | 71.5      | 5    | 11   | 5                                     | 8.5 | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 13                  | 14 | 10 | 10 | 6             | 7    | 6       | 7    | 65.3 | 33.0   | 37.0   | 37.0   | 7       | 13   | 79.5    | 7    | 13               | 44.0 | 6       | 8    | 6  | 6.5    | 64.5   | 142    | 154     | 166  | 7       | 6    | 71.0      | 5    | 12   | 5                                     | 8   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 14                  | 16 | 10 | 10 | 6             | 7    | 6       | 6.5  | 60.3 | 34.0   | 34.0   | 38.0   | 7       | 13   | 75.0    | 7    | 13               | 43.0 | 6       | 7    | 6  | 7      | 60.6   | 144    | 156     | 168  | 7       | 6    | 70.5      | 5    | 12   | 5                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 16                  | 17 | 10 | 10 | 6             | 7    | 6       | 6.5  | 63.1 | 36.0   | 40.0   | 40.0   | 7       | 13   | 81.5    | 7    | 13               | 51.0 | 6       | 7    | 6  | 6.5    | 57.8   | 145    | 157     | 169  | 7       | 6    | 70.0      | 5    | 12   | 5                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 17                  | 19 | 11 | 10 | 6             | 7    | 6       | 6.5  | 62.3 | 37.0   | 37.0   | 41.0   | 7       | 12   | 80.0    | 7    | 12               | 50.5 | 6       | 6    | 6  | 7.5    | 56.5   | 147    | 159     | 171  | 7       | 6    | 70.0      | 5    | 12   | 5                                     | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 19                  | 21 | 12 | 10 | 6             | 6.5  | 6       | 7    | 61.5 | 39.0   | 39.0   | 43.0   | 7       | 12   | 78.5    | 7    | 12               | 50.5 | 7       | 8    | 6  | 8      | 55.8   | 149    | 161     | 173  | 7       | 6    | 70.0      | 5    | 12   | 5                                     | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 20                  | 22 | 12 | 10 | 6             | 6.5  | 6       | 6.5  | 60.3 | 40.0   | 40.0   | 44.0   | 7       | 12   | 78.0    | 7    | 12               | 50.0 | 7       | 7.5  | 6  | 7      | 54.6   | 150    | 162     | 174  | 7       | 6    | 70.0      | 5    | 12   | 5                                     | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 22                  | 24 | 12 | 10 | 6             | 6    | 6       | 6    | 59.3 | 42.0   | 46.0   | 46.0   | 7       | 12   | 77.0    | 7    | 12               | 50.0 | 7       | 7    | 6  | 6.5    | 54.0   | 152    | 164     | 176  | 7       | 6    | 69.5      | 5    | 12   | 5                                     | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 23                  | 25 | 13 | 10 | 7             | 7.5  | 6       | 6    | 59.1 | 43.0   | 43.0   | 47.0   | 8       | 15   | 84.5    | 8    | 15               | 57.5 | 7       | 6.5  | 6  | 7      | 53.6   | 153    | 165     | 177  | 8       | 7    | 75.5      | 5    | 12   | 5                                     | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 25                  | 27 | 13 | 10 | 7             | 7    | 6       | 6    | 58.4 | 45.0   | 45.0   | 49.0   | 8       | 15   | 83.5    | 8    | 15               | 57.5 | 7       | 6.5  | 6  | 7      | 53.1   | 155    | 167     | 179  | 8       | 7    | 75.5      | 5    | 12   | 5                                     | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 27                  | 29 | 14 | 10 | 7             | 6.5  | 6       | 6    | 58.6 | 51.0   | 51.0   | 51.0   | 8       | 15   | 82.5    | 8    | 15               | 57.0 | 7       | 6.5  | 6  | 7.5    | 53.3   | 157    | 169     | 181  | 8       | 7    | 75.5      | 5    | 12   | 5                                     | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 28                  | 31 | 14 | 10 | 7             | 6.5  | 6       | 6    | 58.3 | 52.0   | 52.0   | 52.0   | 8       | 14   | 82.0    | 8    | 14               | 57.0 | 7       | 6.5  | 6  | 7.5    | 52.9   | 159    | 171     | 183  | 8       | 7    | 75.5      | 5    | 12   | 5                                     | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 30                  | 33 | 15 | 10 | 7             | 6    | 6       | 6    | 58.8 | 54.0   | 54.0   | 54.0   | 8       | 15   | 80.5    | 8    | 15               | 56.5 | 7       | 6.5  | 6  | 7      | 53.3   | 161    | 173     | 185  | 8       | 6.5  | 75.5      | 5    | 12   | 6                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 31                  | 34 | 15 | 10 | 8             | 7.5  | 7       | 8    | 63.5 | 55.0   | 55.0   | 55.0   | 8       | 15   | 79.5    | 8    | 15               | 56.0 | 7       | 6    | 6  | 7      | 53.1   | 162    | 174     | 186  | 8       | 6.5  | 75.5      | 5    | 12   | 6                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 32                  | 35 | 15 | 10 | 8             | 7.5  | 7       | 7    | 63.3 | 56.0   | 56.0   | 56.0   | 8       | 14   | 79.0    | 8    | 14               | 55.5 | 7       | 6    | 6  | 6.5    | 53.0   | 163    | 175     | 187  | 8       | 6.5  | 75.5      | 5    | 12   | 6                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 33                  | 37 | 16 | 10 | 8             | 7    | 7       | 7.5  | 64.0 | 57.0   | 57.0   | 57.0   | 8       | 14   | 77.5    | 8    | 14               | 55.0 | 7       | 6    | 6  | 6.5    | 53.5   | 165    | 177     | 189  | 8       | 6    | 75.5      | 5    | 12   | 6                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 34                  | 38 | 16 | 10 | 8             | 7    | 7       | 7.5  | 62.4 | 58.0   | 58.0   | 58.0   | 8       | 14   | 76.5    | 8    | 14               | 54.0 | 7       | 6    | 6  | 6      | 51.9   | 166    | 178     | 190  | 8       | 6    | 75.5      | 5    | 12   | 6                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 35                  | 40 | 16 | 10 | 8             | 6.5  | 7       | 7    | 62.4 | 59.0   | 59.0   | 59.0   | 8       | 13   | 75.0    | 8    | 13               | 53.5 | 7       | 6    | 6  | 6      | 52.0   | 168    | 180     | 192  | 9       | 7    | 81.5      | 5    | 12   | 6                                     | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 36                  | 41 | 17 | 10 | 8             | 6    | 7       | 7.5  | 63.1 | 60.0   | 60.0   | 66.0   | 8       | 12   | 74.5    | 8    | 12               | 52.5 | 8       | 7.5  | 7  | 8      | 55.5   | 169    | 181     | 193  | 9       | 7    | 81.5      | 5    | 12   | 6                                     | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 38                  | 42 | 17 | 10 | 8             | 6    | 7       | 7.5  | 62.9 | 62.0   | 62.0   | 68.0   | 8       | 12   | 73.5    | 8    | 12               | 50.0 | 8       | 7.5  | 7  | 7.5    | 55.8   | 170    | 182     | 194  | 9       | 7    | 81.5      | 5    | 12   | 6                                     | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 39                  | 43 | 18 | 10 | 8             | 6    | 7       | 7.5  | 63.8 | 63.0   | 63.0   | 69.0   | 8       | 12   | 73.0    | 8    | 12               | 49.0 | 8       | 7    | 7  | 7.5    | 56.1   | 171    | 183     | 195  | 9       | 7    | 81.5      | 5    | 12   | 6                                     | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 40                  | 44 | 18 | 10 | 8             | 6    | 7       | 7.5  | 63.6 | 70.0   | 70.0   | 70.0   | 8       | 12   | 72.0    | 8    | 12               | 48.5 | 8       | 6.5  | 7  | 7      | 56.3   | 172    | 184     | 196  | 9       | 6.5  | 81.5      | 5    | 12   | 6                                     | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 40                  | 46 | 19 | 10 | 8             | 6    | 7       | 7    | 64.8 | 70.0   | 70.0   | 70.0   | 8       | 12   | 72.0    | 8    | 12               | 49.0 | 8       | 7    | 7  | 7      | 56.6   | 174    | 186     | 198  | 9       | 6.5  | 81.5      | 5    | 12   | 6                                     | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 41                  | 47 | 19 | 10 | 9             | 7.5  | 7       | 6.5  | 64.6 | 71.0   | 71.0   | 71.0   | 8       | 12   | 71.5    | 8    | 12               | 48.5 | 8       | 7    | 7  | 6.5    | 56.9   | 175    | 187     | 199  | 9       | 6    | 81.5      | 5    | 12   | 6                                     | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| SPAN (S) = 16 FT |                  |    |    |    |               |      |         |      |      |        |         |        |         |      |         |      |                  |      |      |      |         |        |        |         |      |         |    |      |           |      | HEIGHT (HT) = 14 FT OR 15 FT OR 16 FT |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------|------------------|----|----|----|---------------|------|---------|------|------|--------|---------|--------|---------|------|---------|------|------------------|------|------|------|---------|--------|--------|---------|------|---------|----|------|-----------|------|---------------------------------------|----|-----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| DESIGN FILL      | MEMBER THICKNESS |    |    |    | TOP SLAB BARS |      |         |      |      |        |         |        |         |      |         |      | BOTTOM SLAB BARS |      |      |      |         |        |        |         |      |         |    |      | WALL BARS |      |                                       |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    | A1 BARS       |      | J3 BARS |      |      |        | H1 BARS |        | H2 BARS |      | A2 BARS |      | J4 BARS          |      |      |      | H3 BARS |        |        | B1 BARS |      | B2 BARS |    |      |           |      |                                       |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  | TS               | BS | TX | TI | SIZE          | SPA. | SIZE    | SPA. | C1   | K2     |         |        | SIZE    | SPA. | C5      | SIZE | SPA.             | C6   | SIZE | SPA. | C4      | K3     |        |         | SIZE | SPA.    | C7 | SIZE | SPA.      | SIZE | SPA.                                  | G1 |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                  |                  |    |    |    |               |      |         |      |      | HT=14' | HT=15'  | HT=16' |         |      |         |      |                  |      |      |      |         | HT=14' | HT=15' | HT=16'  |      |         |    |      |           |      |                                       |    |     |    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 FT             | 15               | 13 | 12 | 13 | 6             | 7.5  | 6       | 8    | 82.9 | 35.0   | 35.0    | 39.0   | 6       | 15   | 160.5   | 6    | 15               | 53.0 | 5    | 6    | 6       | 7      | 101.1  | 177     | 189  | 201     | 6  | 6    | 70.5      | 5    | 10                                    | 5  | 7   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 FT             | 17               | 14 | 12 | 13 | 6             | 7.5  | 6       | 8.5  | 82.9 | 37.0   | 37.0    | 41.0   | 6       | 14   | 160.5   | 6    | 14               | 50.0 | 6    | 8    | 6       | 7      | 95.1   | 178     | 190  | 202     | 7  | 7    | 73.0      | 5    | 12                                    | 5  | 7   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 FT             | 13               | 13 | 12 | 13 | 6             | 7    | 6       | 7    | 99.8 | 37.0   | 37.0    | 37.0   | 7       | 15   | 94.0    | 7    | 15               | 46.0 | 6    | 8.5  | 6       | 6      | 86.1   | 177     | 189  | 201     | 7  | 6    | 72.0      | 5    | 11                                    | 5  | 7   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 FT             | 13               | 15 | 12 | 13 | 6             | 7    | 6       | 6.5  | 82.6 | 37.0   | 37.0    | 37.0   | 7       | 14   | 77.5    | 7    | 14               | 44.5 | 6    | 7.5  | 6       | 6.5    | 82.5   | 179     | 191  | 203     | 7  | 6    | 71.5      | 5    | 12                                    | 5  | 7   | 12 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 FT             | 14               | 16 | 13 | 13 | 6             | 7.5  | 6       | 6.5  | 76.6 | 38.0   | 38.0    | 38.0   | 7       | 13   | 74.5    | 7    | 13               | 44.0 | 6    | 7    | 6       | 6.5    | 77.6   | 180     | 192  | 204     | 7  | 6    | 71.0      | 5    | 12                                    | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 FT            | 15               | 18 | 13 | 13 | 6             | 6.5  | 6       | 6    | 79.5 | 39.0   | 39.0    | 39.0   | 7       | 13   | 80.5    | 7    | 13               | 51.5 | 6    | 6.5  | 6       | 6      | 75.6   | 182     | 194  | 206     | 7  | 6    | 71.0      | 5    | 12                                    | 5  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 FT            | 17               | 19 | 14 | 13 | 6             | 7    | 6       | 6    | 77.8 | 41.0   | 41.0    | 41.0   | 7       | 13   | 79.5    | 7    | 13               | 51.5 | 6    | 6    | 6       | 6      | 73.1   | 183     | 195  | 207     | 7  | 6    | 70.5      | 5    | 12                                    | 5  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 FT            | 18               | 21 | 15 | 13 | 6             | 7    | 6       | 6    | 76.3 | 42.0   | 42.0    | 42.0   | 7       | 12   | 78.5    | 7    | 12               | 51.0 | 7    | 8    | 6       | 6      | 71.8   | 185     | 197  | 209     | 7  | 6    | 70.5      | 5    | 12                                    | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 16 FT            | 20               | 22 | 15 | 13 | 6             | 6.5  | 7       | 7.5  | 79.9 | 44.0   | 44.0    | 44.0   | 7       | 12   | 78.0    | 7    | 12               | 51.0 | 7    | 7.5  | 6       | 6      | 70.3   | 186     | 198  | 210     | 7  | 6    | 70.0      | 5    | 12                                    | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 18 FT            | 22               | 24 | 15 | 13 | 6             | 6    | 7       | 7    | 78.8 | 46.0   | 46.0    | 52.0   | 7       | 12   | 77.5    | 7    | 12               | 51.0 | 7    | 7    | 7       | 7      | 72.4   | 188     | 200  | 212     | 7  | 6    | 70.0      | 5    | 12                                    | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 FT            | 23               | 25 | 16 | 13 | 7             | 7.5  | 7       | 7    | 78.0 | 47.0   | 47.0    | 53.0   | 8       | 15   | 85.0    | 8    | 15               | 58.5 | 7    | 6    | 7       | 7.5    | 71.4   | 189     | 201  | 213     | 8  | 7    | 76.0      | 5    | 12                                    | 6  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 22 FT            | 25               | 27 | 17 | 13 | 7             | 7    | 7       | 7.5  | 77.8 | 49.0   | 49.0    | 49.0   | 7       | 12   | 76.0    | 7    | 12               | 50.5 | 7    | 6    | 6       | 6      | 68.0   | 191     | 203  | 215     | 8  | 7    | 76.0      | 5    | 12                                    | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 FT            | 26               | 29 | 17 | 13 | 7             | 7    | 7       | 7    | 76.9 | 50.0   | 50.0    | 56.0   | 8       | 15   | 83.5    | 8    | 15               | 58.5 | 7    | 6.5  | 7       | 7.5    | 70.4   | 193     | 205  | 217     | 8  | 7    | 76.0      | 5    | 12                                    | 6  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 FT            | 28               | 31 | 18 | 13 | 7             | 6.5  | 7       | 7    | 76.9 | 52.0   | 52.0    | 52.0   | 8       | 15   | 82.5    | 8    | 15               | 58.0 | 7    | 6.5  | 6       | 6      | 67.1   | 195     | 207  | 219     | 8  | 7    | 76.5      | 5    | 12                                    | 6  | 7   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 28 FT            | 29               | 33 | 19 | 13 | 7             | 6    | 7       | 7    | 77.1 | 53.0   | 53.0    | 53.0   | 8       | 15   | 82.0    | 8    | 15               | 58.0 | 7    | 6    | 6       | 6      | 67.1   | 197     | 209  | 221     | 8  | 6.5  | 76.5      | 5    | 12                                    | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 30 FT            | 31               | 34 | 19 | 13 | 8             | 7.5  | 7       | 6.5  | 76.8 | 55.0   | 55.0    | 55.0   | 8       | 15   | 80.5    | 8    | 15               | 57.0 | 7    | 6    | 6       | 6      | 67.0   | 198     | 210  | 222     | 8  | 6.5  | 76.0      | 5    | 12                                    | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 32 FT            | 32               | 36 | 20 | 13 | 8             | 7.5  | 7       | 6.5  | 77.3 | 56.0   | 56.0    | 56.0   | 8       | 14   | 79.5    | 8    | 14               | 56.5 | 7    | 6    | 6       | 6      | 67.3   | 200     | 212  | 224     | 8  | 6    | 76.5      | 5    | 12                                    | 6  | 6.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 34 FT            | 33               | 37 | 21 | 13 | 8             | 7    | 7       | 6.5  | 77.6 | 57.0   | 57.0    | 57.0   | 8       | 14   | 78.5    | 8    | 14               | 55.5 | 7    | 6    | 6       | 6      | 67.3   | 201     | 213  | 225     | 8  | 6    | 76.5      | 5    | 12                                    | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 FT            | 34               | 38 | 21 | 13 | 8             | 7    | 7       | 6.5  | 75.5 | 58.0   | 58.0    | 58.0   | 8       | 14   | 77.5    | 8    | 14               | 55.0 | 8    | 7    | 6       | 6      | 64.9   | 202     | 214  | 226     | 8  | 6    | 76.5      | 5    | 12                                    | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 38 FT            | 35               | 40 | 21 | 13 | 8             | 6.5  | 7       | 6    | 75.5 | 59.0   | 59.0    | 59.0   | 8       | 13   | 76.5    | 8    | 13               | 54.0 | 8    | 7.5  | 6       | 6      | 65.1   | 204     | 216  | 228     | 9  | 7    | 82.0      | 5    | 12                                    | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40 FT            | 36               | 41 | 22 | 13 | 8             | 6.5  | 7       | 6    | 76.1 | 66.0   | 66.0    | 66.0   | 8       | 13   | 75.5    | 8    | 13               | 53.5 | 8    | 7.5  | 7       | 7.5    | 68.5   | 205     | 217  | 229     | 9  | 7    | 82.0      | 5    | 12                                    | 6  | 6   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 42 FT            | 37               | 42 | 23 | 13 | 8             | 6.5  | 7       | 6.5  | 76.9 | 67.0   | 67.0    | 67.0   | 8       | 12   | 75.0    | 8    | 12               | 52.5 | 8    | 6.5  | 7       | 7.5    | 68.8   | 206     | 218  | 230     | 9  | 7    | 82.5      | 5    | 12                                    | 7  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 44 FT            | 38               | 44 | 24 | 13 | 8             | 6    | 7       | 6    | 77.6 | 68.0   | 68.0    | 68.0   | 8       | 12   | 74.5    | 8    | 12               | 52.0 | 8    | 7    | 7       | 7      | 69.4   | 208     | 220  | 232     | 9  | 6.5  | 82.5      | 5    | 12                                    | 7  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 46 FT            | 39               | 45 | 25 | 13 | 8             | 6    | 7       | 6    | 78.4 | 69.0   | 69.0    | 69.0   | 8       | 12   | 74.0    | 8    | 12               | 51.0 | 8    | 7    | 7       | 7      | 69.8   | 209     | 221  | 233     | 9  | 6.5  | 82.5      | 5    | 12                                    | 7  | 7.5 | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 48 FT            | 40               | 46 | 26 | 13 | 8             | 6    | 7       | 6    | 79.1 | 70.0   | 70.0    | 70.0   | 8       | 12   | 73.5    | 8    | 12               | 50.0 | 8    | 6.5  | 7       | 7      | 70.1   | 210     | 222  | 234     | 9  | 6.5  | 82.5      | 5    | 12                                    | 7  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50 FT            | 41               | 47 | 27 | 13 | 9             | 7.5  | 7       | 6    | 79.9 | 71.0   | 71.0    | 71.0   | 8       | 12   | 73.0    | 8    | 12               | 49.5 | 8    | 6    | 7       | 6.5    | 70.5   | 211     | 223  | 235     | 9  | 6    | 82.5      | 5    | 12                                    | 7  | 8   | 0  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



**GENERAL NOTES:**

IF DESIGN FILL IS BETWEEN TABULATED DESIGN FILLS, USE THE NEXT GREATER TABULATED DESIGN FILL, EXCEPT FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET. FOR DESIGN FILLS BETWEEN 2 FEET AND 4 FEET USE THE GREATER MEMBER THICKNESS. AREA OF REINFORCEMENT AND BAR DIMENSIONS FROM THE 2 FEET AND 4 FEET TABULATED DESIGN FILLS. AREA OF REINFORCEMENT EQUALS BAR AREA PER FOOT SPACING.

SPECIAL DESIGNS ARE REQUIRED WHEN THE DESIGN FILL IS LESS THAN 1 FOOT OR GREATER THAN 50 FEET.

DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.

DESIGN FILLS ARE MEASURED FROM THE TOP OF TOP SLAB TO THE TOP OF EARTH FILL OR ROADWAY.

CULVERTS MEET STRENGTH AND SERVICEABILITY REQUIREMENTS FOR THE DESIGN VEHICULAR LIVE LOAD HL-93 MINUS THE LANE LOAD.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**CONCRETE  
DOUBLE BOX CULVERT**  
MEMBER THICKNESS  
BAR SIZE, SPACING & DIMENSIONS  
SPAN (S): 16 FEET  
HEIGHT (HT): 14 THRU 16 FEET

DATE EFFECTIVE: 10/01/2011  
DATE PREPARED: 9/8/2011

**703.47**

SHEET NO.  
27 OF 27

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.