

TABLE LISTING SHEET NOS. (from Index), MAXIMUM HEIGHTS OF FILL ABOVE CULVERT, AND WINGWALLS & PARAPETS STANDARDS FOR SPECIAL DESIGN BOX CULVERTS.

| SIZE<br>(feet) |        | SINGLES                                                      |                                            |                                     | DOUBLES                                                      |                                            |                                     | TRIPLES                                                      |                                            |                                     | SIZE<br>(feet) |      |
|----------------|--------|--------------------------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------------------------------|--------------------------------------------|-------------------------------------|--------------------------------------------------------------|--------------------------------------------|-------------------------------------|----------------|------|
| SPAN           | HEIGHT | SHEET NO. FOR<br>SPECIAL DESIGN<br>—(See Index at<br>Right.) | MAX.<br>HEIGHT<br>OVER<br>CULVERT<br>(ft.) | WINGWALLS<br>& PARAPETS<br>STANDARD | SHEET NO. FOR<br>SPECIAL DESIGN<br>—(See Index at<br>Right.) | MAX.<br>HEIGHT<br>OVER<br>CULVERT<br>(ft.) | WINGWALLS<br>& PARAPETS<br>STANDARD | SHEET NO. FOR<br>SPECIAL DESIGN<br>—(See Index at<br>Right.) | MAX.<br>HEIGHT<br>OVER<br>CULVERT<br>(ft.) | WINGWALLS<br>& PARAPETS<br>STANDARD | HEIGHT         | SPAN |
| 4              | 3      | (5) (6) (7)                                                  | 60                                         | * 2321                              |                                                              |                                            |                                     |                                                              |                                            |                                     | 3              | 4    |
|                | 4      | (1) (3) (4)                                                  | 90                                         | * 2321                              | (12) (13)                                                    | 100                                        | * 2325                              |                                                              |                                            |                                     | 4              |      |
|                | 5      | (1) (3) (4)                                                  | 80                                         | * 2321                              | (12) (13)                                                    | 10                                         | * 2325                              |                                                              |                                            |                                     | 5              |      |
|                | 6      | (1) (3) (4)                                                  | 60                                         | * 2322                              |                                                              |                                            |                                     |                                                              |                                            |                                     | 6              |      |
| 5              | 4      | (1) (3) (4)                                                  | 90                                         | * 2321                              | (12) (13)                                                    | 70                                         | * 2325                              |                                                              |                                            |                                     | 4              | 5    |
|                | 5      | (4a) & (4b)                                                  | 160                                        | * 2321                              | (9) (10) (11)                                                | 60                                         | * 2325                              | (18)                                                         | 60                                         | * 2325                              | 5              |      |
|                | 6      | (1) (3) (4)                                                  | 60                                         | * 2322                              | (14) (15) (16)                                               | 80                                         | * 2325                              |                                                              |                                            |                                     | 6              |      |
| 6              | 7.8    | (2) (3) (4)                                                  | 30, 10                                     | 2323                                |                                                              |                                            |                                     |                                                              |                                            |                                     |                | 6    |
|                | 4      | (2) (3) (4)                                                  | 80                                         | * 2321                              |                                                              |                                            |                                     | (19)                                                         | 50                                         | * 2325                              | 4              |      |
|                | 5      | (5) (6) (7)                                                  | 80                                         | * 2321                              | (9) (10) (11)                                                | 70                                         | * 2325                              | (20)                                                         | 80                                         | * 2325                              | 5              |      |
|                | 6      | (1) (3) (4)                                                  | 80                                         | * 2321                              | (13a) & (13b)                                                | 120                                        | * 2325                              | (21)                                                         | 50                                         | * 2325                              | 6              |      |
|                | 7      |                                                              |                                            |                                     | (9) (10) (11)                                                | 50                                         | * 2326                              |                                                              |                                            |                                     | 7              |      |
|                | 8      | (1) (3) (4)                                                  | 53                                         | * 2323                              |                                                              |                                            |                                     |                                                              |                                            |                                     | 8              |      |
| 7              | 4      | (2) (3) (4)                                                  | 70                                         | * 2323                              |                                                              |                                            |                                     |                                                              |                                            |                                     | 4              | 7    |
|                | 5      | (8)                                                          | 80                                         | * 2323                              | (9) (10) (11)                                                | 80                                         | * 2326                              | (22)                                                         | 50                                         | * 2326                              | 5              |      |
|                | 6      | (5) (6) (7)                                                  | 80                                         | * 2323                              | (14) (15) (16)                                               | 60                                         | * 2326                              | (23)                                                         | 80                                         | * 2326                              | 6              |      |
|                | 7      | (8)                                                          | 80                                         | * 2323                              | (17)                                                         | 80                                         | * 2326                              | (24)                                                         | 50                                         | * 2326                              | 7              |      |
|                | 8      | (5) (6) (7)                                                  | 20                                         | * 2323                              |                                                              |                                            |                                     |                                                              |                                            |                                     | 8              |      |
| 8              |        |                                                              |                                            |                                     |                                                              |                                            |                                     |                                                              |                                            |                                     |                | 8    |
|                | 6      | (5) (6) (7)                                                  | 60                                         | * 2323                              | (14) (15) (16)                                               | 60                                         | * 2326                              | (25)                                                         | 80                                         | * 2326                              | 6              |      |
|                | 7      | (5) (6) (7)                                                  | 80                                         | * 2323                              | (14) (15) (16)                                               | 60                                         | * 2326                              |                                                              |                                            |                                     | 7              |      |
|                | 8      | (5) (6) (7)                                                  | 60                                         | * 2323                              | (14) (15) (16)                                               | 110                                        | * 2326                              | (26)                                                         | 80                                         | * 2326                              | 8              |      |
|                |        |                                                              |                                            |                                     |                                                              |                                            |                                     | (26-a)                                                       | 40                                         | 2327                                | 10             |      |
| 9              | 5      | (8)                                                          | 10                                         | * 2323                              |                                                              |                                            |                                     |                                                              |                                            |                                     | 5              | 9    |
|                | 6      | (8)                                                          | 80                                         | * 2323                              | (17)                                                         | 30                                         | * 2326                              |                                                              |                                            |                                     | 6              |      |
|                | 7      |                                                              |                                            |                                     |                                                              |                                            |                                     | (27)                                                         | 50                                         | * 2326                              | 7              |      |
|                | 8      | (8)                                                          | 90                                         | * 2323                              | (14) (15) (16)                                               | 40                                         | * 2326                              | (28)                                                         | 50                                         | * 2326                              | 8              |      |
|                | 9      | (8)                                                          | 80                                         | * 2323                              | (9) (10) (11)                                                | 50                                         | * 2326                              | (29)                                                         | 50                                         | * 2326                              | 9              |      |
| 10             |        |                                                              |                                            |                                     |                                                              |                                            |                                     |                                                              |                                            |                                     |                | 10   |
|                | 6      |                                                              |                                            |                                     | (9) (10) (11)                                                | 50                                         | * 2327                              | (30)                                                         | 30                                         | * 2327                              | 6              |      |
|                | 7      |                                                              |                                            |                                     |                                                              |                                            |                                     |                                                              |                                            |                                     | 7              |      |
|                | 8      |                                                              |                                            |                                     | (9) (10) (11)                                                | 80                                         | * 2327                              | (31)                                                         | 50                                         | * 2327                              | 8              |      |
|                | 9      | (8)                                                          | 80                                         | * 2324                              | (9) (10) (11)                                                | 40                                         | * 2327                              | (32)                                                         | 40                                         | * 2327                              | 9              |      |
|                | 10     | (5) (6) (7)                                                  | 50                                         | * 2324                              |                                                              |                                            |                                     | (33)                                                         | 50                                         | * 2327                              | 10             |      |
|                | 11     |                                                              |                                            |                                     |                                                              |                                            |                                     | (34)                                                         | 30                                         | * 2327                              | 11             |      |
|                | 12     |                                                              |                                            |                                     |                                                              |                                            |                                     | (35)                                                         | 60                                         | * 2327                              | 12             |      |

\* STANDARDS INDICATED ABOVE SHOW CULVERTS PERPENDICULAR TO ROADWAY. FOR SKEWED CULVERTS SEE ALSO STANDARD 2328, 2329 OR 2330 (AS APPLICABLE) AND STANDARD 2331 FOR WINGWALLS & PARAPETS QUANTITIES.

FOR SINGLE 6'x8' & SINGLE 7'x8' CULVERTS USE WINGWALLS & PARAPETS FOR A 8'x8' WITH THE PARAPET AND K BARS REDUCED IN LENGTH BY 2 FT. AND 1 FT. RESPECTIVELY. FOR A DOUBLE 6'x7' USE WINGWALLS & PARAPETS FOR DOUBLE 7'x7' WITH PARAPET AND K BARS REDUCED IN LENGTH BY 2 FEET. FOR A DOUBLE 4'x5' USE WINGWALLS & PARAPETS OF A DOUBLE 5'x5' WITH PARAPET AND K BARS REDUCED IN LENGTH BY TWO FEET. REDUCE CONCRETE REQUIRED FOR PARAPETS & TOEWALLS (2 ENDS) BY 0.32 & 0.64 CU YDS. FOR WIDTH DECREASES OF 1 FT. AND 2 FT. RESPECTIVELY. IF CULVERT IS SKEWED, DIVIDE THE 1 FT. OR THE 2 FT. BY THE SINE OF THE SKEW ANGLE TO OBTAIN THE REDUCTION. OTHER NON-STANDARD CULVERT SIZES SUCH AS 5'x7', 5'x8' OR 8'x10' SHALL BE SIMILARLY TREATED BY MODIFYING WINGWALLS & PARAPETS FOR 7'x7', 8'x8' AND 10'x10' RESPECTIVELY.

INDEX OF SPECIAL DESIGN BOX CULVERTS

| SHEET NO.     | TITLE                                                           | DATE                |
|---------------|-----------------------------------------------------------------|---------------------|
| (1)           | SHEET 1 OF 3 — 4x4, 4x5 4x6 5x4 5x6 6x6 6x8                     | 10-23-97            |
| (2)           | SHEET 1A OF 3 — 6x4 7x4 5x7 5x8                                 | 11-26-01            |
| (3)           | SHEET 2 OF 3 — 4x4, 4x5 4x6 5x4 5x6 6x6 6x8, 5x7, 7x4           | 1-23-86             |
| (4)           | SHEET 3 OF 3 — 4x4, 4x5, 4x6, 5x4 5x6, 6x6, 6x8, 6x4, 7x4       | 5-22-84             |
| (4a) & (4b)   | 5 x 5                                                           | 11-26-01 & JULY 82  |
| (5)           | SHEET 1 OF 3 — 4x3, 10x10 6x5 7x6 7x8 8x7 8x6 8x8               | 11-26-01            |
| (6)           | SHEET 2 OF 3 — 4x3, 10x10 6x5 7x6 7x8 8x7 8x6 8x8               | 9-18-84             |
| (7)           | SHEET 3 OF 3 — 4x3, 10x10 6x5 7x6 7x8 8x7 8x6 8x8               | 9-18-84             |
| (8)           | 7x7 9x9 7x5 9x8 10x9 9x6 9x5                                    | 11-26-01            |
| (9)           | SHEET 1 OF 3 — DOUBLE 6x7, 6x5, 9x9, 10x8, 10x9, 5x5, 7x5, 10x6 | 10-23-97            |
| (10)          | SHEET 2 OF 3 — DOUBLE 6x7, 6x5, 9x9, 10x8, 10x9, 5x5, 7x5, 10x6 | 11-26-01            |
| (11)          | SHEET 3 OF 3 — DOUBLE 6x7, 6x5, 9x9, 10x8, 10x9, 5x5, 7x5, 10x6 | 6-7-90              |
| (12)          | SHEET 1 OF 2 — DOUBLE 5x4, 4x4, 4x5                             | 11-26-01            |
| (13)          | SHEET 2 OF 2 — DOUBLE 5x4, 4x4, 4x5                             | 10-12-83            |
| (13a) & (13b) | DOUBLE 6 x 6                                                    | 11-26-01 & JULY -82 |
| (14)          | SHEET 1 OF 3 — DOUBLE 5x6 8x8 9x8 7x6 8x7 8x6                   | 11-26-01            |
| (15)          | SHEET 2 OF 3 — DOUBLE 5x6 8x8 9x8 7x6 8x7 8x6                   | 5-22-84             |
| (16)          | SHEET 3 OF 3 — DOUBLE 5x6 8x8 9x8 7x6 8x7 8x6                   | 3-19-93             |
| (17)          | DOUBLE 7x7 9x6                                                  | 11-26-01            |
| (18)          | TRIPLE 5x5                                                      | 11-26-01            |
| (19)          | TRIPLE 6x4                                                      | 11-26-01            |
| (20)          | TRIPLE 6x5                                                      | 11-26-01            |
| (21)          | TRIPLE 6x6                                                      | 11-26-01            |
| (22)          | TRIPLE 7x5                                                      | 11-26-01            |
| (23)          | TRIPLE 7x6                                                      | 11-26-01            |
| (24)          | TRIPLE 7x7                                                      | 11-26-01            |
| (25)          | TRIPLE 8x6                                                      | 11-26-01            |
| (26)          | TRIPLE 8x8                                                      | 11-26-01            |
| (26-a)        | TRIPLE 8x10                                                     | 11-26-01            |
| (27)          | TRIPLE 9x7                                                      | 11-26-01            |
| (28)          | TRIPLE 9x8                                                      | 11-26-01            |
| (29)          | TRIPLE 9x9                                                      | 11-26-01            |
| (30)          | TRIPLE 10x6                                                     | 11-26-01            |
| (31)          | TRIPLE 10x8                                                     | 11-26-01            |
| (32)          | TRIPLE 10x9                                                     | 11-26-01            |
| (33)          | TRIPLE 10x10                                                    | 11-26-01            |
| (34)          | TRIPLE 10x11                                                    | 11-26-01            |
| (35)          | TRIPLE 10x12                                                    | 11-26-01            |
| (36)          | QUADRUPLE 7x4                                                   | 11-26-01            |

REV. DATES (1, 2, 4a, 5, 8, 9, 12, 13a, 14, 17-36) 11-26-01  
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R.M.U. REV. DATES 3-21-88  
R.M.U. REV. DATES 9-26-84  
R.M.U. REV. DATES 5-29-84  
R.M.U. GENERAL REVISIONS 3-17-83  
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G.J.P. REV. DATES (18, 21, 22, 24, 26, 28, 30, 31, 33, 34, 35) 11-18-97  
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