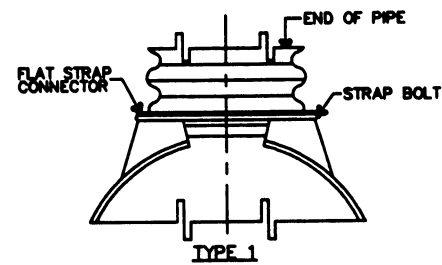


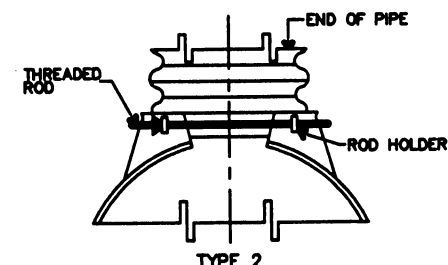
DETAILS OF METAL END SECTION
FOR ROUND AND PIPE-ARCH SHAPES
N.T.S.

DIMENSIONS OF GALVANIZED STEEL END SECTIONS FOR CIRCULAR PIPE 2-2/3 X 1/2 AND 3 X 1 CORRUGATIONS

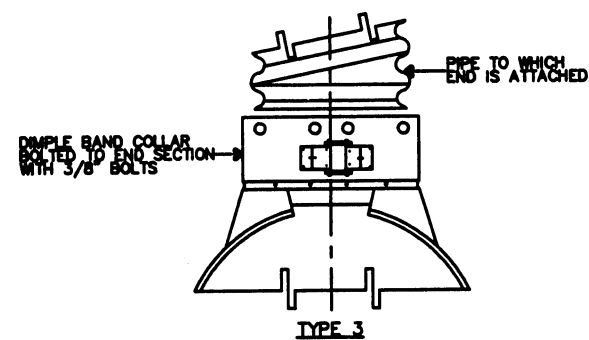
| PIPE DIAM. | GA. | DIMENSIONS | | | | | APPROX. SLOPE | BODY |
|------------|-----|------------|----------|---------|-------------|---------|---------------|------|
| | | A (1"±) | B (MAX.) | H (1"±) | L (1 1/2"±) | W (2"±) | | |
| 12 | 10 | 6 | 8 | 8 | 21 | 24 | 2 1/2 | 1PC. |
| 16 | 10 | 7 | 8 | 8 | 28 | 30 | 2 1/2 | 1PC. |
| 18 | 10 | 8 | 10 | 8 | 31 | 38 | 2 1/2 | 1PC. |
| 21 | 10 | 9 | 12 | 8 | 38 | 42 | 2 1/2 | 1PC. |
| 24 | 10 | 10 | 13 | 8 | 41 | 48 | 2 1/2 | 1PC. |
| 30 | 14 | 12 | 16 | 8 | 51 | 60 | 2 1/2 | 1PC. |
| 36 | 14 | 14 | 19 | 8 | 60 | 72 | 2 1/2 | 2PC. |



FOR SIZES 12 IN. THROUGH 24 IN. ROUND AND 17 X 13 IN. THROUGH 26 X 20 IN. PIPE - ARCHES



FOR SIZES 30 IN. AND 36 IN. ROUND AND 35 X 24 IN. PIPE - ARCHES



FOR ALL ROUND AND PIPE - ARCH SIZES EQUIVALENT ROUND TYPE 1 AND TYPE 2 CONNECTIONS ARE RECOMMENDED FOR THE SMALLER SIZES WITH ANNULAR ENDS

DETAILS FOR END SECTION CONNECTIONS FOR ROUND AND PIPE-ARCH SHAPES
N.T.S.

DIMENSIONS OF GALVANIZED STEEL END SECTIONS ARCH - FOR PIPE, 2 2/3 X 1/2 IN. CORRUGATIONS

| SPAN/RISE | GA. | DIMENSIONS | | | | | APPROX. SLOPE | BODY |
|-----------|-----|------------|----------|---------|-------------|---------|---------------|------|
| | | A (1"±) | B (MAX.) | H (1"±) | L (1 1/2"±) | W (2"±) | | |
| 17X13 | 10 | 7 | 8 | 8 | 19 | 30 | 2 1/2 | 1PC. |
| 21X16 | 10 | 7 | 10 | 8 | 23 | 38 | 2 1/2 | 1PC. |
| 24X18 | 10 | 8 | 12 | 8 | 28 | 42 | 2 1/2 | 1PC. |
| 26X20 | 10 | 9 | 14 | 8 | 32 | 48 | 2 1/2 | 1PC. |
| 35X24 | 14 | 10 | 16 | 8 | 38 | 60 | 2 1/2 | 1PC. |

GENERAL NOTES:

- ALL 3 PIECE BODIES TO HAVE 12 GA. SIDES AND 10 GA. CENTER PANELS. MULTIPLE PANEL BODIES TO HAVE LAP SEAMS WHICH ARE TO BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS AS PER ASHTO M-38 AND ASHTO-216.
- GALVANIZED TOE PLATE EXTENSION TO BE AVAILABLE AS AN ACCESSORY. WHEN SPECIFIED ON THE ORDER AND WILL BE THE SAME GAGE AS THE END SECTION.
- FOR ARCH OR ELLIPTICAL PIPES, END SECTIONS SHALL USE PIPE DIAMETER EQUIVALENT TO ITS SPAN.
- FOR RIPRAP AT PIPE OUTLETS SEE RIPRAP STANDARD DRAWINGS.
- IN CASES WHEN THE PIPE IS IN SKEW, THE CONTRACTOR IS RESPONSIBLE TO ADJUST THE GRADING AS REQUIRED.

EFFECTIVE DATE: DECEMBER 1998

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|---|-----------------|----|---|----------|
| COMMONWEALTH OF PUERTO RICO DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS HIGHWAY AND TRANSPORTATION AUTHORITY | | | RECOMMENDED BY <i>[Signature]</i> DESIGN AREA DIRECTOR DATE: 12-7-98 | |
| DRAINAGE METAL END SECTIONS | | | APPROVED BY: <i>[Signature]</i> EXECUTIVE DIRECTOR DATE: 12-7-98 | |
| DRAINAGE METAL END SECTIONS | | | APPROVED BY: <i>[Signature]</i> DIV. ADM. FIN. - PR DIVISION DATE: 12-7-98 | |
| DATE | REVISION | BY | STD. | DR |
| 12-1998 | PAGE RENUMBERED | | DWG. | 20 OF 40 |