

**GENERAL NOTE****Specifications:**

Construction - Va. Department of Transportation Road and Bridge Specifications, 1991.  
 Design - AASHTO Standard Specifications for Highway Bridges, 1983, Including Interim Specifications, 1984, 1985 and VDOT Modifications, using Load Factor Design.

All concrete shall be Class A4.

Deformed reinforcing bars shall conform to ASTM A615, Grade 60. All reinforcing bar dimensions on the detailed drawing are to centers of bars except where otherwise noted and are subject to fabrication and construction tolerances.

Dimensions on bar diagrams are out-to-out of bars. Bars are straight unless otherwise shown.

The centers of main reinforcing bars shall be 2" from the face of the concrete unless otherwise shown.

At the Contractor's option, WV Series bars may be spliced at the top of footing in order to facilitate construction. Splice lengths shall be in accordance with TABLE C. No additional compensation shall be provided for the increase in reinforcing steel quantity due to the splices.

When concrete protective coating is required, all steel shall be epoxy-coated.

Bearing capacity of foundations shall be 1.5 Tons/Sq. Ft. minimum for wings A - X and 2 Tons/Sq. Ft. minimum for wings Y - EE.

Weepholes shall be placed at lowest point feasible for free drainage away from wing.

Four Type I Wings are to be used for straight crossings and skews up to 20°. Two Type I & two Type II Wings are to be used for skews from 25° to 45°. For skews above 45°, special design wings are required. The wingwall to be used for each culvert is shown on the BC series sheets.

The designs shown are applicable for a 45° skew with the roadway and other conditions indicated. Any change in these conditions invalidates these designs.

Quantities shown are for one wing.

| WING | Quantity (One Wing) |                              |
|------|---------------------|------------------------------|
|      | Concrete<br>Cu. Yd. | Reinforcing<br>Steel<br>Lbs. |
| A    | 2.110               | 133.183                      |
| B    | 2.504               | 165.003                      |
| C    | 2.916               | 188.084                      |
| D    | 3.347               | 211.979                      |
| E    | 3.796               | 248.635                      |
| F    | 4.424               | 276.524                      |
| G    | 4.923               | 318.386                      |
| H    | 5.836               | 360.316                      |
| I    | 6.392               | 388.442                      |
| J    | 7.186               | 454.546                      |
| K    | 8.026               | 511.375                      |
| L    | 8.913               | 572.281                      |
| M    | 9.582               | 626.003                      |
| N    | 10.546              | 702.040                      |
| O    | 11.825              | 879.295                      |
| P    | 12.580              | 964.846                      |
| Q    | 13.679              | 1063.138                     |
| R    | 14.810              | 1350.012                     |
| S    | 17.199              | 1225.256                     |
| T    | 19.817              | 1532.432                     |
| U    | 21.317              | 1745.661                     |
| V    | 22.858              | 2152.605                     |
| W    | 23.964              | 1823.343                     |
| X    | 25.975              | 2817.287                     |
| Y    | 28.546              | 2310.426                     |
| Z    | 30.359              | 3017.503                     |
| AA   | 32.262              | 3328.030                     |
| BB   | 34.212              | 3818.744                     |
| CC   | 35.571              | 4104.313                     |
| DD   | 37.575              | 5249.194                     |
| EE   | 40.334              | 4171.222                     |

SPECIFICATION  
REFERENCE

**WING DETAILS**  
**1/2:1 FILL SLOPE - TYPE II**  
 VIRGINIA DEPARTMENT OF TRANSPORTATION

**VDOT**

ROAD AND BRIDGE STANDARDS

REVISION DATE

SHEET 2 OF 7

1006.09