## **GENERAL NOTE**

Specifications:

Construction - Va. Department of Transportation Road and Bridge Specifications, 2007.

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 epoxycoated.

Bearing capacity of foundations shall be 1.5 Tans/Sq. Ft. minimum for wings A - X and 2 Tans/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  $45^{\circ}$  skew with the roadway and other conditions indicated. Any change in these conditions invalidates these designs.

Quantities shown are for one wing.

WING CU. Yd. Lbs.  A 2.334		Quantity (One Wing)	
WING Cu. Yd. Lbs.  A 2.334   146.814   B 2.741   179.226   C 3.208   202.300   D 3.658   227.238   E 4.174   268.139   F 4.665   294.699   G 5.412   348.564   H 6.153   378.666   I 6.798   431.368   J 7.621   479.805   K 8.567   531.895   L 9.236   601.618   M 10.275   652.010   N 10.623   706.389   O 11.644   765.083   P 12.804   868.664   Q 13.615   938.923   R 14.852   1247.994   S 16.063   1193.231   T 17.077   1263.468   U 18.343   1566.661   V 19.708   2817.906   W 21.169   1838.465   X 24.710   2352.406   Y 29.398   2856.703   Z 31.458   2680.408   AA 33.355   3557.475   BB 36.175   3205.508   CC 38.270   3362.599		Concrete	
B 2.741 179.226 C 3.208 202.300 D 3.658 227.238 E 4.174 268.139 F 4.665 294.699 G 5.412 348.564 H 6.153 378.666 I 6.798 431.368 J 7.621 479.805 K 8.567 531.895 L 9.236 601.618 M 10.275 652.010 N 10.623 706.389 O 11.644 765.083 P 12.804 868.664 Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	WING	Cu. Yd.	
C 3.208 202.300  D 3.658 227.238  E 4.174 268.139  F 4.665 294.699  G 5.412 348.564  H 6.153 378.666  I 6.798 431.368  J 7.621 479.805  K 8.567 531.895  L 9.236 601.618  M 10.275 652.010  N 10.623 706.389  O 11.644 765.083  P 12.804 868.664  Q 13.615 938.923  R 14.852 1247.994  S 16.063 1193.231  T 17.077 1263.468  U 18.343 1566.661  V 19.708 2817.906  W 21.169 1838.465  X 24.710 2352.406  Y 29.398 2856.703  Z 31.458 2680.408  AA 33.355 3557.475  BB 36.175 3205.508  CC 38.270 3362.599	A	2.334	146.814
D         3.658         227.238           E         4.174         268.139           F         4.665         294.699           G         5.412         348.564           H         6.153         378.666           I         6.798         431.368           J         7.621         479.805           K         8.567         531.895           L         9.236         601.618           M         10.275         652.010           N         10.623         706.389           0         11.644         765.083           P         12.804         868.664           Q         13.615         938.923           R         14.852         1247.994           S         16.063         1193.231           T         17.077         1263.468           U         18.343         1566.661           V         19.708         2817.906           W         21.169         1838.465           X         24.710         2352.406           Y         29.398         2856.703           Z         31.458         2680.408           AA         33	В	2.741	179.226
E 4.174 268.139 F 4.665 294.699 G 5.412 348.564 H 6.153 378.666 I 6.798 431.368 J 7.621 479.805 K 8.567 531.895 L 9.236 601.618 M 10.275 652.010 N 10.623 706.389 O 11.644 765.083 P 12.804 868.664 Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	С	3.208	202.300
F 4.665 294.699 G 5.412 348.564 H 6.153 378.666 I 6.798 431.368 J 7.621 479.805 K 8.567 531.895 L 9.236 601.618 M 10.275 652.010 N 10.623 706.389 O 11.644 765.083 P 12.804 868.664 Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	D	3.658	227.238
G 5.412 348.564 H 6.153 378.666 I 6.798 431.368 J 7.621 479.805 K 8.567 531.895 L 9.236 601.618 M 10.275 652.010 N 10.623 706.389 O 11.644 765.083 P 12.804 868.664 Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	Ε	4,174	268.139
H 6.153 378.666  I 6.798 431.368  J 7.621 479.805  K 8.567 531.895  L 9.236 601.618  M 10.275 652.010  N 10.623 706.389  O 11.644 765.083  P 12.804 868.664  Q 13.615 938.923  R 14.852 1247.994  S 16.063 1193.231  T 17.077 1263.468  U 18.343 1566.661  V 19.708 2817.906  W 21.169 1838.465  X 24.710 2352.406  Y 29.398 2856.703  Z 31.458 2680.408  AA 33.355 3557.475  BB 36.175 3205.508  CC 38.270 3362.599	F	4.665	294.699
1	G	5.412	348.564
J       7.621       479.805         K       8.567       531.895         L       9.236       601.618         M       10.275       652.010         N       10.623       706.389         O       11.644       765.083         P       12.804       868.664         Q       13.615       938.923         R       14.852       1247.994         S       16.063       1193.231         T       17.077       1263.468         U       18.343       1566.661         V       19.708       2817.906         W       21.169       1838.465         X       24.710       2352.406         Y       29.398       2856.703         Z       31.458       2680.408         AA       33.355       3557.475         BB       36.175       3205.508         CC       38.270       3362.599	Н	6.153	378.666
K       8.567       531.895         L       9.236       601.618         M       10.275       652.010         N       10.623       706.389         O       11.644       765.083         P       12.804       868.664         Q       13.615       938.923         R       14.852       1247.994         S       16.063       1193.231         T       17.077       1263.468         U       18.343       1566.661         V       19.708       2817.906         W       21.169       1838.465         X       24.710       2352.406         Y       29.398       2856.703         Z       31.458       2680.408         AA       33.355       3557.475         BB       36.175       3205.508         CC       38.270       3362.599	ı	6.798	431.368
L 9.236 601.618  M 10.275 652.010  N 10.623 706.389  O 11.644 765.083  P 12.804 868.664  Q 13.615 938.923  R 14.852 1247.994  S 16.063 1193.231  T 17.077 1263.468  U 18.343 1566.661  V 19.708 2817.906  W 21.169 1838.465  X 24.710 2352.406  Y 29.398 2856.703  Z 31.458 2680.408  AA 33.355 3557.475  BB 36.175 3205.508  CC 38.270 3362.599	J	7.621	479.805
M 10.275 652.010 N 10.623 706.389 O 11.644 765.083 P 12.804 868.664 Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	К	8.567	531.895
N 10.623 706.389  0 11.644 765.083  P 12.804 868.664  Q 13.615 938.923  R 14.852 1247.994  S 16.063 1193.231  T 17.077 1263.468  U 18.343 1566.661  V 19.708 2817.906  W 21.169 1838.465  X 24.710 2352.406  Y 29.398 2856.703  Z 31.458 2680.408  AA 33.355 3557.475  BB 36.175 3205.508  CC 38.270 3362.599	L	9.236	601.618
O 11.644 765.083 P 12.804 868.664 Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	М	10.275	652.010
P 12.804 868.664 Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	N	10.623	706.389
Q 13.615 938.923 R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	0	11.644	765.083
R 14.852 1247.994 S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	Р	12.804	868.664
S 16.063 1193.231 T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	۵	13.615	938.923
T 17.077 1263.468 U 18.343 1566.661 V 19.708 2817.906 W 21.169 1838.465 X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	R	14.852	1247.994
U 18.343 1566.661  V 19.708 2817.906  W 21.169 1838.465  X 24.710 2352.406  Y 29.398 2856.703  Z 31.458 2680.408  AA 33.355 3557.475  BB 36.175 3205.508  CC 38.270 3362.599	S	16.063	1193.231
V         19.708         2817.906           W         21.169         1838.465           X         24.710         2352.406           Y         29.398         2856.703           Z         31.458         2680.408           AA         33.355         3557.475           BB         36.175         3205.508           CC         38.270         3362.599	Т	17.077	1263.468
W 21.169 1838.465  X 24.710 2352.406  Y 29.398 2856.703  Z 31.458 2680.408  AA 33.355 3557.475  BB 36.175 3205.508  CC 38.270 3362.599	U	18.343	1566.661
X 24.710 2352.406 Y 29.398 2856.703 Z 31.458 2680.408 AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	٧	19.708	2817.906
Y         29.398         2856.703           Z         31.458         2680.408           AA         33.355         3557.475           BB         36.175         3205.508           CC         38.270         3362.599	w	21.169	1838.465
Z 31.458 2680.408  AA 33.355 3557.475  BB 36.175 3205.508  CC 38.270 3362.599	×	24.710	2352.406
AA 33.355 3557.475 BB 36.175 3205.508 CC 38.270 3362.599	Y	29.398	2856.703
BB 36.175 3205.508 CC 38.270 3362.599	Z	31.458	2680.408
CC 38.270 3362.599	AA	33.355	3557.475
	BB	36.175	3205.508
DD 45.675 4925.833	CC	38.270	3362.599
	DD	45.675	4925.833
EE 48.208 5122.544	EE	48.208	5122.544

Augostitu (Ann Wing)

SPECIFICATION REFERENCE	WING DETAIL
	2: 1 FILL SLOPE - TYPE I
	VIRGINIA DEPARTMENT OF TRANSPORTATION

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ROAD AND BRIDGE STANDARDS

REVISION DATE 10/09 SHEET 2 OF 7