

TABLE B		
Bar Size	Pin Dia.	Z
#3	2 1/4"	4"
#4	3"	4 1/2"
#5	3 3/4"	5"
#6	4 1/2"	6"
#7	5 1/4"	7"
#8	6"	8"
#9	9"	10 1/8"

TABLE C	
Bar Size	Splice Length
#4	1'-4"
#5	1'-8"
#6	1'-11"
#7	2'-4"
#8	3'-1"
#9	3'-11"

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 Cu. Yd.	Reinforcing Steel Lbs.
A	1.692	102.747
B	2.086	134.045
C	2.498	158.678
D	2.627	171.704
E	3.187	202.147
F	3.669	225.269
G	4.084	256.122
H	4.630	287.351
I	5.395	345.119
J	6.163	386.348
K	7.093	447.595
L	7.394	485.032
M	8.090	549.490
N	8.735	601.075
O	9.496	662.513
P	10.480	972.915
Q	10.995	1009.521
R	12.071	1141.937
S	12.962	1028.293
T	16.931	1149.082
U	17.605	1533.982
V	19.070	1841.681
W	20.946	2596.967
X	22.546	2009.473
Y	24.453	1968.517
Z	26.215	2385.838
AA	27.508	3913.960
BB	28.542	2710.731
CC	29.932	3799.925
DD	36.104	4040.276
EE	37.813	4568.249

WING	DIMENSIONS					BAR SPACINGS																			NO. WEEP HOLES			
	J	K	L	M	N	WV1		WV2		WV3		WV4		WH1		WH2		WF2		WF3		WF5		WF6		WF7		
						O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG		HH	JJ	KK
A	1'-6"	4'-0"	1'-9"	5'-0"	4'-0"	4	4'-0"	3	3'-9"	--	----	--	----	1	1'-3"	--	----	--	----	4	4'-0"	--	----	3	3'-9"	--	----	--
B	1'-6"	4'-6"	1'-9"	6'-0"	4'-0"	5	5'-0"	4	5'-0"	--	----	--	----	1	0'-6"	1	1'-3"	--	----	5	5'-0"	--	----	4	5'-0"	--	----	--
C	1'-6"	5'-0"	1'-9"	7'-0"	4'-0"	6	6'-0"	5	6'-3"	--	----	--	----	1	1'-0"	1	1'-3"	--	----	6	6'-0"	--	----	5	6'-3"	--	----	--
D	1'-6"	5'-6"	2'-3"	7'-0"	4'-0"	6	6'-0"	5	6'-3"	--	----	--	----	2	1'-6"	1	1'-3"	--	----	6	6'-0"	--	----	5	6'-3"	--	----	--
E	1'-6"	6'-0"	2'-3"	8'-0"	4'-6"	7	7'-0"	6	7'-6"	--	----	--	----	1	0'-9"	2	2'-6"	--	----	7	7'-0"	--	----	6	7'-6"	--	----	--
F	1'-6"	6'-6"	2'-3"	9'-0"	4'-6"	8	8'-0"	6	7'-6"	--	----	--	----	1	1'-3"	2	2'-6"	--	----	8	8'-0"	--	----	6	7'-6"	--	----	--
G	1'-6"	7'-0"	2'-9"	9'-0"	5'-6"	8	8'-0"	6	8'-0"	--	----	--	----	2	1'-9"	2	2'-6"	1	0'-9"	8	8'-0"	--	----	6	7'-6"	--	----	--
H	1'-6"	7'-6"	2'-9"	10'-0"	5'-6"	9	9'-0"	7	8'-9"	--	----	--	----	2	2'-3"	2	2'-6"	1	0'-9"	9	9'-0"	--	----	7	8'-9"	--	----	--
I	1'-6"	8'-0"	3'-0"	11'-0"	6'-0"	10	10'-0"	8	10'-0"	--	----	--	----	2	1'-6"	3	3'-9"	2	1'-3"	10	10'-0"	--	----	8	10'-0"	--	----	--
J	1'-6"	8'-6"	3'-0"	12'-0"	6'-6"	11	11'-0"	9	11'-3"	--	----	--	----	2	2'-0"	3	3'-9"	2	1'-9"	7	7'-0"	4	3'-0"	9	11'-3"	--	----	--
K	1'-6"	9'-0"	3'-6"	13'-0"	7'-0"	8	8'-0"	10	12'-6"	4	3'-0"	--	----	2	2'-6"	3	3'-9"	3	2'-3"	8	8'-0"	4	3'-0"	10	12'-6"	--	----	--
L	1'-6"	9'-6"	3'-6"	13'-0"	7'-6"	8	8'-0"	10	12'-6"	4	3'-0"	--	----	3	3'-0"	3	3'-9"	3	2'-9"	8	8'-0"	4	3'-0"	10	12'-6"	--	----	--
M	1'-6"	10'-0"	3'-6"	14'-0"	7'-6"	9	9'-0"	10	12'-6"	4	3'-0"	--	----	2	2'-3"	4	5'-0"	3	2'-9"	8	8'-0"	6	4'-6"	10	12'-6"	--	----	--
N	1'-6"	10'-6"	4'-0"	14'-0"	8'-6"	9	9'-0"	10	12'-6"	4	3'-0"	--	----	3	2'-9"	4	5'-0"	4	3'-9"	7	7'-0"	7	5'-3"	10	12'-6"	--	----	--
O	1'-6"	11'-0"	4'-0"	15'-0"	8'-6"	9	9'-0"	11	13'-9"	6	4'-6"	--	----	3	3'-3"	4	5'-0"	4	3'-9"	7	7'-0"	8	6'-0"	11	13'-9"	--	----	--
P	1'-6"	11'-6"	4'-0"	16'-0"	9'-0"	9	9'-0"	12	15'-0"	7	5'-3"	--	----	2	2'-6"	5	6'-3"	5	4'-3"	7	7'-0"	10	7'-6"	12	15'-0"	--	----	--
Q	1'-6"	12'-0"	4'-6"	16'-0"	9'-6"	8	8'-0"	12	15'-0"	8	6'-0"	--	----	3	3'-0"	5	6'-3"	5	4'-9"	6	6'-0"	6	4'-6"	12	15'-0"	6	3'-0"	--
R	1'-6"	12'-6"	4'-6"	17'-0"	10'-0"	6	6'-0"	13	16'-3"	6	4'-6"	8	4'-0"	3	3'-6"	5	6'-3"	6	5'-3"	6	6'-0"	6	4'-6"	13	16'-3"	8	4'-0"	--
S	1'-6"	13'-0"	4'-6"	18'-0"	10'-0"	7	7'-0"	14	17'-6"	6	4'-6"	8	4'-0"	4	4'-0"	5	6'-3"	6	5'-3"	6	6'-0"	7	5'-3"	14	17'-6"	8	4'-0"	--
T	2'-0"	13'-6"	4'-9"	19'-0"	11'-6"	8	8'-0"	14	17'-6"	6	4'-6"	8	4'-0"	3	3'-3"	6	7'-6"	7	6'-9"	7	7'-0"	6	4'-6"	14	17'-6"	10	5'-0"	--
U	2'-0"	14'-0"	5'-3"	19'-0"	12'-0"	6	6'-0"	14	17'-6"	7	5'-3"	10	5'-0"	3	3'-9"	6	7'-6"	8	7'-3"	6	6'-0"	6	4'-6"	14	17'-6"	12	6'-0"	--
V	2'-0"	14'-6"	5'-3"	20'-0"	12'-6"	6	6'-0"	15	18'-9"	7	5'-3"	12	6'-0"	4	4'-3"	6	7'-6"	8	7'-9"	7	7'-0"	6	4'-6"	15	18'-9"	12	6'-0"	1
W	2'-0"	15'-0"	5'-3"	21'-0"	13'-6"	7	7'-0"	16	20'-0"	7	5'-3"	12	6'-0"	4	4'-9"	6	7'-6"	9	8'-9"	8	8'-0"	6	4'-6"	16	20'-0"	12	6'-0"	1
X	2'-0"	15'-6"	5'-9"	21'-0"	15'-0"	7	7'-0"	16	20'-0"	7	5'-3"	12	6'-0"	5	5'-3"	6	7'-6"	11	10'-3"	8	8'-0"	6	4'-6"	16	20'-0"	12	6'-0"	1
Y	2'-0"	16'-0"	5'-9"	22'-0"	15'-0"	8	8'-0"	17	21'-3"	7	5'-3"	12	6'-0"	4	4'-6"	7	8'-9"	11	10'-3"	8	8'-0"	7	5'-3"	17	21'-3"	12	6'-0"	1
Z	2'-0"	16'-6"	5'-9"	23'-0"	15'-6"	9	9'-0"	18	22'-6"	7	5'-3"	12	6'-0"	4	5'-0"	7	8'-9"	11	10'-9"	8	8'-0"	9	6'-9"	18	22'-6"	12	6'-0"	1
AA	2'-0"	17'-0"	5'-9"	24'-0"	15'-6"	8	8'-0"	18	22'-6"	10	7'-6"	12	6'-0"	4	4'-3"	8	10'-0"	11	10'-9"	9	9'-0"	9	6'-9"	18	22'-6"	12	6'-0"	1
BB	2'-0"	17'-6"	6'-3"	24'-0"	16'-0"	8	8'-0"	18	22'-6"	10	7'-6"	12	6'-0"	4	4'-9"	8	10'-0"	12	11'-3"	8	8'-0"	10	7'-6"	18	22'-6"	12	6'-0"	1
CC	2'-0"	18'-0"	6'-3"	25'-0"	16'-0"	8	8'-0"	19	23'-9"	11	8'-3"	12	6'-0"	5	5'-3"	8	10'-0"	12	11'-3"	8	8'-0"	10	7'-6"	19	23'-9"	14	7'-0"	2
DD	2'-6"	18'-6"	6'-3"	26'-0"	16'-6"	8	8'-0"	20	25'-0"	11	8'-3"	14	7'-0"	5	5'-9"	8	10'-0"	12	11'-9"	9	9'-0"	10	7'-6"	20	25'-0"	14	7'-0"	2
EE	2'-6"	19'-0"	6'-9"	26'-0"	17'-6"	7	7'-0"	20	25'-0"	11	8'-3"	16	8'-0"	5	6'-3"	8	10'-0"	13	12'-9"	8	8'-0"	10	7'-6"	20	25'-0"	16	8'-0"	2

WING	WF 1		WF 2					WF 3						WF 4		
	SIZE	LENGTH	SIZE	LENGTH				SIZE	a			LENGTH			SIZE	LENGTH
				From	To	Vary By	# Ea		From	To	Vary By	From	To	Vary By		
A	4	4'- 6"	--	-----	-----	-----	--	4	3'- 5"	2'- 8"	0'- 2/4"	4'- 5"	3'- 8"	0'- 2/4"	4	4'- 7"
B	4	5'- 6"	--	-----	-----	-----	--	4	3'- 5"	2'- 7 5/8"	0'- 1 1/8"	4'- 5"	3'- 7 5/8"	0'- 1 1/8"	4	5'- 7"
C	4	6'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 7 1/2"	0'- 1 3/4"	4'- 6"	3'- 7 1/2"	0'- 1 3/4"	4	6'- 7"
D	4	6'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 7 1/2"	0'- 1 3/4"	4'- 6"	3'- 7 1/2"	0'- 1 3/4"	4	6'- 7"
E	4	7'- 6"	4	2'- 5"	-----	-----	2	4	3'-11"	2'- 7 1/4"	0'- 2/4"	4'-11"	3'- 7 1/4"	0'- 2/4"	4	7'- 8"
F	4	8'- 6"	4	2'- 9"	-----	-----	2	4	3'-11"	2'- 8"	0'- 1 1/8"	4'-11"	3'- 8"	0'- 1 1/8"	4	8'- 7"
G	4	8'- 6"	4	5'- 1"	2'- 5"	2'- 8"	2	4	4'-11"	2'- 8"	0'- 3 3/8"	5'-11"	3'- 8"	0'- 3 3/8"	4	8'-10"
H	4	9'- 6"	4	5'- 9"	2'- 8 5/8"	3'- 3/8"	2	4	4'-11"	2'- 8"	0'- 3"	5'-11"	3'- 8"	0'- 3"	4	9'-10"
I	4	10'- 6"	4	7'- 1"	2'- 5 1/2"	2'- 3 3/4"	2	4	5'- 5"	2'- 8 1/2"	0'- 3/4"	6'- 5"	3'- 8 1/2"	0'- 3/4"	4	10'-11"
J	4	11'- 6"	4	8'- 3"	2'- 3/4"	2'-11 7/8"	2	4	4'- 9"	2'- 8 1/2"	0'- 3/2"	5'- 9"	3'- 8 1/2"	0'- 3/2"	4	12'- 0"
K	4	12'- 6"	4	9'- 6"	2'- 1 1/8"	2'- 5 3/8"	2	4	5'- 2"	2'- 9"	0'- 3 5/8"	6'- 2"	3'- 9"	0'- 3 5/8"	4	13'- 1"
L	4	12'- 6"	4	9'-10"	1'-10 3/8"	2'- 7 7/8"	2	4	5'- 6"	2'- 9"	0'- 4/8"	6'- 6"	3'- 9"	0'- 4/8"	4	13'- 3"
M	4	13'- 6"	4	10'- 7"	2'- 5/8"	2'-10 1/8"	2	4	5'- 2"	2'- 7"	0'- 3 3/8"	6'- 2"	3'- 7"	0'- 3 3/8"	4	14'- 2"
N	4	13'- 6"	4	11'- 2"	1'- 7 1/2"	2'- 4 5/8"	2	4	5'- 5"	2'- 7 3/4"	0'- 4 3/4"	6'- 5"	3'- 7 3/4"	0'- 4 3/4"	4	14'- 6"
O	4	14'- 6"	4	12'- 0"	1'- 9"	2'- 6 3/4"	2	4	5'- 4"	2'- 9 3/8"	0'- 4 3/8"	6'- 4"	3'- 9 3/8"	0'- 4 3/8"	4	15'- 5"
P	4	15'- 6"	4	13'- 0"	1'- 8 3/8"	2'- 3 1/8"	2	4	5'- 2"	2'- 6 1/2"	0'- 4 1/2"	6'- 2"	3'- 6 1/2"	0'- 4 1/2"	4	16'- 7"
Q	4	15'- 6"	4	13'- 3"	1'- 6 3/8"	2'- 4 1/8"	2	4	5'- 1"	2'- 8 1/2"	0'- 4 3/4"	6'- 1"	3'- 8 1/2"	0'- 4 3/4"	4	16'- 9"
R	4	16'- 6"	4	14'- 3"	1'- 6"	2'- 1 1/2"	2	4	5'- 2"	2'- 8"	0'- 5"	6'- 2"	3'- 8"	0'- 5"	4	17'-10"
S	4	17'- 6"	4	15'- 2"	1'- 7 1/4"	2'- 3 1/8"	2	4	5'- 1"	2'- 9 1/4"	0'- 4 5/8"	6'- 1"	3'- 9 1/4"	0'- 4 5/8"	4	18'- 9"
T	4	18'- 6"	4	16'- 6"	1'- 4 1/8"	2'- 1 1/8"	2	4	5'-10"	2'- 8 3/8"	0'- 5 3/8"	6'-10"	3'- 8 3/8"	0'- 5 3/8"	4	20'- 3"
U	4	18'- 6"	4	16'- 7"	1'- 3"	1'-11"	2	4	5'- 7"	2'- 8 1/2"	0'- 5 3/4"	6'- 7"	3'- 8 1/2"	0'- 5 3/4"	4	20'- 6"
V	4	19'- 6"	4	17'- 7"	1'- 3"	2'- 1/2"	2	5	6'- 1/4"	2'- 8 1/8"	0'- 5 5/8"	7'- 2"	3'-10 5/8"	0'- 5 5/8"	4	21'- 7"
W	4	20'- 6"	4	18'- 8"	1'- 2 3/4"	1'-11 1/4"	2	5	6'- 8 1/4"	2'- 8 1/4"	0'- 6"	7'-10"	3'-10"	0'- 6"	4	22'-11"
X	4	20'- 6"	4	18'-11"	1'- 1/2"	1'- 7 1/2"	2	5	7'- 4/4"	2'- 9 1/4"	0'- 6 7/8"	8'- 6"	3'-11"	0'- 6 7/8"	4	23'- 7"
Y	4	21'- 6"	4	19'-10"	1'- 1/2"	1'- 8 1/2"	2	5	7'- 3/4"	2'-10 1/4"	0'- 6 5/8"	8'- 5"	4'- 0"	0'- 6 5/8"	4	24'- 6"
Z	4	22'- 6"	4	20'-10"	1'- 1/8"	1'- 9 3/8"	2	5	6'-11 1/4"	2'- 7 1/4"	0'- 6 1/2"	8'- 1"	3'- 9"	0'- 6 1/2"	4	25'- 7"
AA	4	23'- 6"	4	21'- 9"	1'- 1 1/2"	1'-10 1/2"	2	5	7'- 3/4"	2'- 7"	0'- 6 1/4"	8'- 5"	3'- 8 3/4"	0'- 6 1/4"	4	26'- 6"
BB	4	23'- 6"	4	21'-10"	1'- 1"	1'- 8 3/4"	2	5	7'- 1 1/4"	2'- 9 1/4"	0'- 6 1/2"	8'- 3"	3'-11"	0'- 6 1/2"	4	26'- 9"
CC	4	24'- 6"	4	22'- 9"	1'- 1 1/2"	1'- 9 3/8"	2	5	6'-10 1/4"	2'- 8 1/4"	0'- 6 1/4"	8'- 0"	3'-10"	0'- 6 1/4"	4	27'- 7"
DD	4	25'- 6"	4	23'- 9"	1'- 1 1/2"	1'-10 5/8"	2	5	7'- 5/4"	2'- 9"	0'- 6 1/4"	8'- 7"	3'-10 3/4"	0'- 6 1/4"	4	28'- 9"
EE	4	25'- 6"	4	23'-11"	1'- 3/8"	1'- 9 1/8"	2	5	7'- 2 1/4"	2'- 9 1/4"	0'- 6 5/8"	8'- 4"	3'-11"	0'- 6 5/8"	4	29'- 2"

BCW-11

WING	SIZE	WF5						WF6				WF7						WH1		WH3		
		a			LENGTH			LENGTH			a			LENGTH			SIZE	LENGTH	SIZE	LENGTH		
		From	To	Vary By	From	To	Vary By	SIZE	From	To	Vary By	From	To	Vary By	From	To					Vary By	
A	--	----	----	----	----	----	4	3'- 5"	2'- 8 ³ / ₈ "	0'- 2 ⁷ / ₈ "	--	----	----	----	----	----	4	4'- 6"	4	5'- 0"		
B	--	----	----	----	----	----	4	3'- 5"	2'- 7 ¹ / ₂ "	0'- 2 ³ / ₈ "	--	----	----	----	----	----	4	5'- 6"	4	6'- 1"		
C	--	----	----	----	----	----	4	3'- 6"	2'- 6 ³ / ₄ "	0'- 2 ¹ / ₄ "	--	----	----	----	----	----	4	6'- 6"	4	7'- 3"		
D	--	----	----	----	----	----	4	3'- 6"	2'- 6 ³ / ₄ "	0'- 2 ¹ / ₄ "	--	----	----	----	----	----	4	6'- 6"	4	7'- 3"		
E	--	----	----	----	----	----	4	3'-11"	2'- 6 ¹ / ₂ "	0'- 2 ³ / ₄ "	--	----	----	----	----	----	4	7'- 6"	4	8'- 4"		
F	--	----	----	----	----	----	4	3'-11"	2'- 8 ³ / ₄ "	0'- 2 ³ / ₈ "	--	----	----	----	----	----	4	8'- 6"	4	9'- 5"		
G	--	----	----	----	----	----	4	4'-11"	2'-10 ¹ / ₄ "	0'- 4 ¹ / ₈ "	--	----	----	----	----	----	4	8'- 6"	4	9'- 5"		
H	--	----	----	----	----	----	4	4'-11"	2'- 8 ³ / ₄ "	0'- 3 ³ / ₄ "	--	----	----	----	----	----	4	9'- 6"	4	10'- 7"		
I	--	----	----	----	----	----	4	5'- 5"	2'- 8"	0'- 4 ¹ / ₈ "	--	----	----	----	----	----	4	10'- 6"	4	11'- 7"		
J	4	5'-11"	5'- 1/2"	0'- 2 ⁵ / ₈ "	6'-11"	6'- 1/2"	0'- 2 ⁵ / ₈ "	4	5'-11"	2'- 7 ⁵ / ₈ "	0'- 4 ³ / ₈ "	--	----	----	----	----	4	11'- 6"	4	12'- 8"		
K	4	6'- 5"	5'- 6"	0'- 2 ³ / ₄ "	7'- 5"	6'- 6"	0'- 2 ³ / ₄ "	4	6'- 5"	2'- 6 ³ / ₄ "	0'- 4 ⁵ / ₈ "	--	----	----	----	----	4	12'- 6"	4	13'- 7"		
L	5	6'-11 ¹ / ₄ "	5'-10 ¹ / ₄ "	0'- 3 ¹ / ₄ "	8'- 1"	7'- 0"	0'- 3 ¹ / ₄ "	4	6'-11"	2'- 6 ¹ / ₂ "	0'- 5 ¹ / ₄ "	--	----	----	----	----	4	12'- 6"	4	13'-10"		
M	5	6'-11 ¹ / ₄ "	5'- 5 ¹ / ₄ "	0'- 3"	8'- 1"	6'- 7"	0'- 3"	4	6'-11"	2'-10 ¹ / ₄ "	0'- 4 ⁵ / ₈ "	--	----	----	----	----	4	13'- 6"	4	14'-11"		
N	5	7'-10 ¹ / ₄ "	5'- 9 ³ / ₄ "	0'- 3 ¹ / ₂ "	9'- 0"	6'-11 ¹ / ₂ "	0'- 3 ¹ / ₂ "	4	7'-11"	2'-11"	0'- 6"	--	----	----	----	----	4	13'- 6"	4	14'-11"		
O	5	7'-10 ¹ / ₄ "	5'- 8 ¹ / ₄ "	0'- 3 ¹ / ₄ "	9'- 0"	6'-10"	0'- 3 ¹ / ₄ "	4	7'-11"	2'-10 ¹ / ₂ "	0'- 5 ¹ / ₂ "	--	----	----	----	----	4	14'- 6"	4	16'- 1"		
P	6	8'- 4 ¹ / ₂ "	5'- 6 ³ / ₄ "	0'- 3 ³ / ₈ "	9'- 9"	6'-11 ¹ / ₄ "	0'- 3 ³ / ₈ "	4	8'- 5"	2'- 9 ¹ / ₂ "	0'- 5 ⁵ / ₈ "	--	----	----	----	----	4	15'- 6"	4	17'- 2"		
Q	5	7'- 4 ¹ / ₄ "	5'- 6 ¹ / ₂ "	0'- 3 ⁵ / ₈ "	8'- 6"	6'- 8 ¹ / ₄ "	0'- 3 ⁵ / ₈ "	4	8'-11"	2'- 9 ¹ / ₂ "	0'- 6 ¹ / ₈ "	5	8'-10 ¹ / ₄ "	7'- 8"	0'- 2 ³ / ₈ "	10'- 0"	8'- 9 ³ / ₄ "	0'- 2 ³ / ₈ "	4	15'- 6"	4	17'- 2"
R	5	7'- 5 ¹ / ₄ "	5'- 6 ³ / ₄ "	0'- 3 ³ / ₄ "	8'- 7"	6'- 8 ¹ / ₂ "	0'- 3 ³ / ₄ "	4	9'- 5"	2'- 7 ³ / ₄ "	0'- 6 ¹ / ₄ "	5	9'- 4 ¹ / ₄ "	7'- 8 ¹ / ₄ "	0'- 2 ¹ / ₂ "	10'- 6"	8'-10"	0'- 2 ¹ / ₂ "	4	16'- 6"	4	18'- 3"
S	5	7'- 6 ¹ / ₄ "	5'- 5 ³ / ₄ "	0'- 3 ¹ / ₂ "	8'- 8"	6'- 7 ¹ / ₂ "	0'- 3 ¹ / ₂ "	4	9'- 5"	2'- 6 ³ / ₄ "	0'- 5 ⁷ / ₈ "	5	9'- 4 ¹ / ₄ "	7'-10 ¹ / ₄ "	0'- 2 ¹ / ₄ "	10'- 6"	9'- 0"	0'- 2 ¹ / ₄ "	4	17'- 6"	4	19'- 5"
T	5	8'- 3 ¹ / ₄ "	6'- 3 ¹ / ₄ "	0'- 4"	9'- 5"	7'- 5"	0'- 4"	4	10'-10"	3'- 1 ¹ / ₄ "	0'- 6 ⁵ / ₈ "	5	10'-10 ¹ / ₄ "	8'- 8"	0'- 2 ⁵ / ₈ "	12'- 0"	9'- 9 ³ / ₄ "	0'- 2 ⁵ / ₈ "	4	18'- 6"	4	20'- 5"
U	5	8'- 2 ¹ / ₄ "	6'- 0"	0'- 4 ³ / ₈ "	9'- 4"	7'- 1 ³ / ₄ "	0'- 4 ³ / ₈ "	4	11'- 4"	3'- 1 ¹ / ₄ "	0'- 7 ¹ / ₈ "	5	11'- 4 ¹ / ₄ "	8'- 5 ³ / ₄ "	0'- 2 ⁷ / ₈ "	12'- 6"	9'- 7 ¹ / ₂ "	0'- 2 ⁷ / ₈ "	4	18'- 6"	4	20'- 5"
V	6	8'- 7 ¹ / ₂ "	6'- 6"	0'- 4 ¹ / ₄ "	10'- 0"	7'-10 ¹ / ₂ "	0'- 4 ¹ / ₄ "	4	11'-10"	2'-11 ¹ / ₈ "	0'- 7 ¹ / ₈ "	6	11'-10 ¹ / ₂ "	9'- 0"	0'- 2 ⁷ / ₈ "	13'- 3"	10'- 4 ¹ / ₂ "	0'- 2 ⁷ / ₈ "	4	19'- 6"	4	21'- 6"
W	6	9'- 5 ¹ / ₂ "	7'- 2 ¹ / ₂ "	0'- 4 ¹ / ₂ "	10'-10"	8'- 7"	0'- 4 ¹ / ₂ "	4	12'-10"	2'-10"	0'- 7 ¹ / ₂ "	6	12'-10 ¹ / ₂ "	9'-10 ¹ / ₂ "	0'- 3"	14'- 3"	11'- 3"	0'- 3"	4	20'- 6"	4	22'- 8"
X	6	10'- 5 ¹ / ₂ "	7'-10 ³ / ₄ "	0'- 5 ¹ / ₈ "	11'-10"	9'- 3 ¹ / ₄ "	0'- 5 ¹ / ₈ "	4	14'- 4"	2'-10"	0'- 8 ⁵ / ₈ "	6	14'- 3 ¹ / ₂ "	10'-11"	0'- 3 ³ / ₈ "	15'- 8"	12'- 3 ¹ / ₂ "	0'- 3 ³ / ₈ "	4	20'- 6"	4	22'- 8"
Y	6	10'- 7 ¹ / ₂ "	7'- 9 ³ / ₈ "	0'- 4 ⁷ / ₈ "	12'- 0"	9'- 1 ⁷ / ₈ "	0'- 4 ⁷ / ₈ "	4	14'- 4"	2'- 9 ³ / ₈ "	0'- 8 ¹ / ₈ "	6	14'- 3 ¹ / ₂ "	11'- 1 ¹ / ₂ "	0'- 3 ¹ / ₄ "	15'- 8"	12'- 5"	0'- 3 ¹ / ₄ "	4	21'- 6"	4	23'- 9"
Z	7	11'- 1 ³ / ₄ "	7'- 5 ⁷ / ₈ "	0'- 4 ⁷ / ₈ "	12'- 9"	9'- 1 ¹ / ₈ "	0'- 4 ⁷ / ₈ "	4	14'-10"	2'- 7 ³ / ₄ "	0'- 8 ¹ / ₈ "	7	14'- 9 ³ / ₄ "	11'- 6 ³ / ₄ "	0'- 3 ¹ / ₄ "	16'- 5"	13'- 2"	0'- 3 ¹ / ₄ "	4	22'- 6"	4	24'-11"
AA	7	11'- 3 ³ / ₄ "	7'-10 ¹ / ₈ "	0'- 4 ⁵ / ₈ "	12'-11"	9'- 5 ³ / ₈ "	0'- 4 ⁵ / ₈ "	4	14'-10"	3'- 1 ¹ / ₄ "	0'- 7 ¹ / ₈ "	7	14'- 9 ³ / ₄ "	11'- 8 ¹ / ₄ "	0'- 3 ¹ / ₈ "	16'- 5"	13'- 3 ¹ / ₂ "	0'- 3 ¹ / ₈ "	4	23'- 6"	4	26'- 0"
BB	7	11'- 7 ³ / ₄ "	7'- 7"	0'- 4 ¹ / ₈ "	13'- 3"	9'- 2 ¹ / ₄ "	0'- 4 ¹ / ₈ "	4	15'- 4"	3'- 1 ³ / ₄ "	0'- 8 ¹ / ₈ "	7	15'- 3 ³ / ₄ "	12'- 3 ¹ / ₄ "	0'- 3 ¹ / ₄ "	16'-11"	13'- 8"	0'- 3 ¹ / ₄ "	4	23'- 6"	4	26'- 0"
CC	7	11'- 3 ³ / ₄ "	7'- 4 ¹ / ₄ "	0'- 4 ³ / ₄ "	12'-11"	8'-11 ¹ / ₂ "	0'- 4 ³ / ₄ "	4	15'- 4"	3'- 3 ¹ / ₄ "	0'- 7 ³ / ₄ "	7	15'- 3 ³ / ₄ "	11'- 8"	0'- 3 ¹ / ₈ "	16'-11"	13'- 3 ¹ / ₄ "	0'- 3 ¹ / ₈ "	4	24'- 6"	4	27'- 1"
DD	7	11'- 9 ³ / ₄ "	7'-11 ¹ / ₂ "	0'- 4 ⁵ / ₈ "	13'- 5"	9'- 6 ³ / ₄ "	0'- 4 ⁵ / ₈ "	4	15'-10"	2'-11"	0'- 7 ³ / ₄ "	7	15'- 9 ³ / ₄ "	12'- 2"	0'- 3 ¹ / ₈ "	17'- 5"	13'- 9 ¹ / ₄ "	0'- 3 ¹ / ₈ "	4	25'- 6"	4	28'- 3"
EE	7	11'-11 ³ / ₄ "	7'- 8 ¹ / ₂ "	0'- 5 ¹ / ₈ "	13'- 7"	9'- 3 ³ / ₄ "	0'- 5 ¹ / ₈ "	4	16'-10"	2'-10 ¹ / ₂ "	0'- 8 ³ / ₈ "	8	16'-10"	12'- 4"	0'- 3 ³ / ₈ "	18'- 8"	14'- 2"	0'- 3 ³ / ₈ "	4	25'- 6"	4	28'- 3"

Sheet 5 of 7

1006.05

WING DETAILS
 1¹/₂:1 FILL SLOPE - TYPE I
 VIRGINIA DEPARTMENT OF TRANSPORTATION

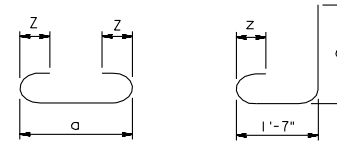
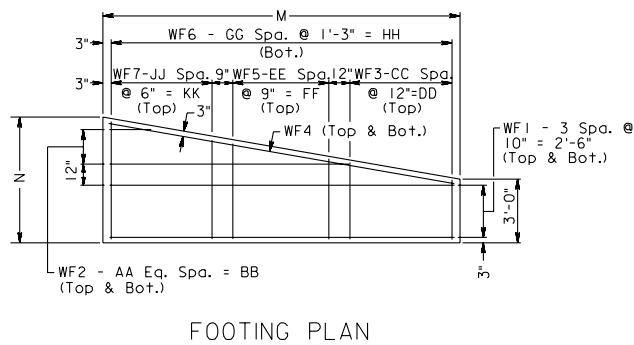
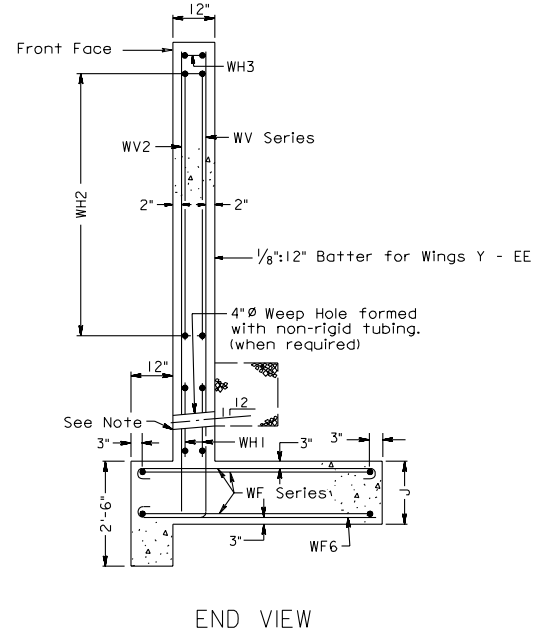
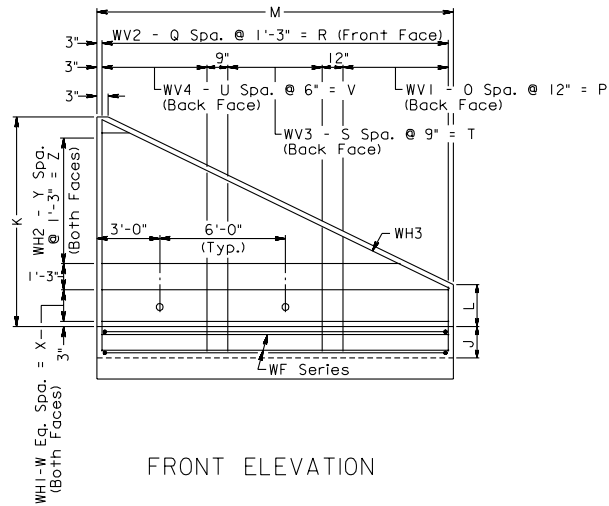
STRUCTURE
 AND
 BRIDGE
 DIVISION

WING	SIZE	WH2					WV1						WV2				
		LENGTH				# Ea	SIZE	a			LENGTH			SIZE	LENGTH		
		From	To	Vary By	From			To	Vary By	From	To	Vary By	From		To	Vary By	
A	4	2'- 1"	-----	-----	2	4	4'- 11 1/4"	3'- 1 1/4"	0'- 5 1/2"	6'- 11"	5'- 1"	0'- 5 1/2"	4	5'- 0"	3'- 2 1/4"	0'- 7 1/4"	
B	4	4'- 8"	2'- 3/8"	2'- 7 5/8"	2	4	5'- 5 1/4"	3'- 1 1/8"	0'- 5 5/8"	7'- 5"	5'- 7/8"	0'- 5 5/8"	4	5'- 6"	3'- 1"	0'- 7 1/4"	
C	4	4'- 7"	2'- 1/4"	2'- 6 3/4"	2	4	5'- 11 1/4"	3'- 3/4"	0'- 5 3/4"	7'- 11"	5'- 1/2"	0'- 5 3/4"	4	6'- 0"	2'- 11 3/4"	0'- 7 1/4"	
D	4	4'- 7"	2'- 1/4"	2'- 6 3/4"	2	4	6'- 5 1/4"	3'- 6 3/4"	0'- 5 3/4"	8'- 5"	5'- 6 1/2"	0'- 5 3/4"	4	6'- 6"	3'- 5 3/4"	0'- 7 1/4"	
E	4	7'- 2"	2'- 0"	2'- 7"	2	4	6'- 11 1/4"	3'- 7"	0'- 5 3/4"	8'- 11"	5'- 6 3/4"	0'- 5 3/4"	4	7'- 0"	3'- 3 3/4"	0'- 7 3/8"	
F	4	7'- 2"	2'- 0"	2'- 7"	2	4	7'- 5 1/4"	3'- 7 1/4"	0'- 5 3/4"	9'- 5"	5'- 7"	0'- 5 3/4"	4	7'- 6"	3'- 9 3/4"	0'- 7 3/8"	
G	4	7'- 2"	2'- 0"	2'- 7"	2	4	7'- 11 1/4"	4'- 1 1/4"	0'- 5 3/4"	9'- 11"	6'- 1"	0'- 5 3/4"	4	8'- 0"	4'- 3 3/4"	0'- 7 3/8"	
H	4	7'- 2"	2'- 0"	2'- 7"	2	4	8'- 5 1/4"	4'- 1 1/2"	0'- 5 3/4"	10'- 5"	6'- 1 1/4"	0'- 5 3/4"	4	8'- 6"	4'- 2 3/8"	0'- 7 3/8"	
I	4	10'- 2"	2'- 1 1/4"	2'- 8 1/4"	2	4	8'- 11 1/4"	4'- 4 1/4"	0'- 5 1/2"	10'- 11"	6'- 4"	0'- 5 1/2"	4	9'- 0"	4'- 4"	0'- 7"	
J	4	10'- 1"	2'- 1"	2'- 8"	2	4	9'- 5 1/4"	4'- 3 3/8"	0'- 5 5/8"	11'- 5"	6'- 3 3/8"	0'- 5 5/8"	4	9'- 6"	4'- 3"	0'- 7"	
K	4	11'- 0"	2'- 3 3/8"	2'- 10 7/8"	2	4	8'- 3 1/4"	4'- 9 1/4"	0'- 5 1/4"	10'- 3"	6'- 9"	0'- 5 1/4"	4	10'- 0"	4'- 7"	0'- 6 1/2"	
L	4	10'- 0"	2'- 3/4"	2'- 7 3/4"	2	4	8'- 7 1/4"	4'- 10 1/4"	0'- 5 5/8"	10'- 7"	6'- 10"	0'- 5 5/8"	4	10'- 6"	4'- 6 3/4"	0'- 7 1/8"	
M	4	12'- 8"	2'- 1/2"	2'- 7 7/8"	2	4	9'- 1 1/4"	4'- 9 1/2"	0'- 5 3/4"	11'- 1"	6'- 9 1/4"	0'- 5 3/4"	4	11'- 0"	5'- 3/4"	0'- 7 1/8"	
N	4	12'- 8"	2'- 1/2"	2'- 7 7/8"	2	4	9'- 7 1/4"	5'- 3 1/2"	0'- 5 3/4"	11'- 7"	7'- 3 1/4"	0'- 5 3/4"	4	11'- 6"	5'- 6 3/4"	0'- 7 1/8"	
O	4	12'- 7"	2'- 1/2"	2'- 7 5/8"	2	4	9'- 4 1/4"	5'- 1 5/8"	0'- 5 5/8"	11'- 4"	7'- 1 3/8"	0'- 5 5/8"	4	12'- 0"	5'- 5 5/8"	0'- 7 1/8"	
P	4	15'- 2"	2'- 1/2"	2'- 7 1/2"	2	4	9'- 6 1/4"	5'- 2 1/2"	0'- 5 3/4"	11'- 6"	7'- 2 1/4"	0'- 5 3/4"	4	12'- 6"	5'- 4 1/2"	0'- 7 1/8"	
Q	4	15'- 2"	2'- 1/2"	2'- 7 1/2"	2	4	9'- 7 1/4"	5'- 10 1/4"	0'- 5 5/8"	11'- 7"	7'- 10"	0'- 5 5/8"	4	13'- 0"	5'- 10 1/2"	0'- 7 1/8"	
R	4	15'- 1"	2'- 3/4"	2'- 7 1/4"	2	4	8'- 7 1/4"	5'- 8 3/4"	0'- 5 3/4"	10'- 7"	7'- 8 1/2"	0'- 5 3/4"	4	13'- 6"	5'- 7 3/4"	0'- 7 1/4"	
S	4	15'- 1"	2'- 1/8"	2'- 7 3/8"	2	4	9'- 1 1/4"	5'- 8 1/8"	0'- 5 7/8"	11'- 1"	7'- 7 1/8"	0'- 5 7/8"	4	14'- 0"	5'- 6 1/2"	0'- 7 1/4"	
T	4	18'- 2"	2'- 1 1/4"	2'- 8 1/8"	2	4	10'- 2 1/4"	6'- 5 1/4"	0'- 5 5/8"	12'- 2"	8'- 5"	0'- 5 5/8"	4	15'- 0"	6'- 10"	0'- 7"	
U	4	18'- 2"	2'- 1 1/4"	2'- 8 1/8"	2	4	9'- 10 1/4"	7'- 1/2"	0'- 5 5/8"	11'- 10"	9'- 1/4"	0'- 5 5/8"	4	15'- 6"	7'- 4"	0'- 7"	
V	4	18'- 1"	2'- 1"	2'- 8"	2	4	9'- 10 1/4"	7'- 1/2"	0'- 5 5/8"	11'- 10"	9'- 1/4"	0'- 5 5/8"	4	16'- 0"	7'- 3"	0'- 7"	
W	4	18'- 0"	2'- 3/4"	2'- 7 3/8"	2	5	10'- 4 3/4"	7'- 1/2"	0'- 5 3/4"	12'- 5"	9'- 3/4"	0'- 5 3/4"	4	16'- 6"	7'- 0"	0'- 7 1/8"	
X	4	18'- 0"	2'- 3/4"	2'- 7 7/8"	2	5	10'- 10 3/4"	7'- 6 1/2"	0'- 5 3/4"	12'- 11"	9'- 6 3/4"	0'- 5 3/4"	4	17'- 0"	7'- 6"	0'- 7 1/8"	
Y	4	20'- 8"	2'- 7/8"	2'- 7 7/8"	2	5	11'- 3 3/4"	7'- 6 3/4"	0'- 5 5/8"	13'- 4"	9'- 7"	0'- 5 5/8"	4	17'- 6"	7'- 4 1/8"	0'- 7 1/8"	
Z	4	20'- 7"	2'- 3/4"	2'- 7 3/4"	2	5	11'- 9 3/4"	7'- 7 1/8"	0'- 5 5/8"	13'- 10"	9'- 7 3/8"	0'- 5 5/8"	4	18'- 0"	7'- 3 3/4"	0'- 7 1/8"	
AA	4	23'- 2"	2'- 1"	2'- 7 5/8"	2	5	11'- 2 3/4"	7'- 5 3/4"	0'- 5 5/8"	13'- 3"	9'- 6"	0'- 5 5/8"	4	18'- 6"	7'- 9 3/4"	0'- 7 1/8"	
BB	4	23'- 2"	2'- 1"	2'- 7 5/8"	2	5	11'- 8 3/4"	7'- 11 3/4"	0'- 5 5/8"	13'- 9"	10'- 0"	0'- 5 5/8"	4	19'- 0"	8'- 3 3/4"	0'- 7 1/8"	
CC	4	23'- 1"	2'- 1"	2'- 7 1/2"	2	5	11'- 10 3/4"	8'- 3/4"	0'- 5 3/4"	13'- 11"	10'- 1"	0'- 5 3/4"	4	19'- 6"	8'- 2 5/8"	0'- 7 1/8"	
DD	4	23'- 1"	2'- 0"	2'- 7 5/8"	2	5	12'- 4 3/4"	8'- 6 3/4"	0'- 5 3/4"	14'- 5"	10'- 7"	0'- 5 3/4"	4	20'- 6"	8'- 7 1/2"	0'- 7 1/8"	
EE	4	23'- 1"	2'- 0"	2'- 7 5/8"	2	5	12'- 4 3/4"	9'- 1 3/8"	0'- 5 5/8"	14'- 5"	11'- 1 5/8"	0'- 5 5/8"	4	21'- 0"	9'- 1 1/2"	0'- 7 1/8"	

STRUCTURE
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WING DETAILS
1 1/2:1 FILL SLOPE - TYPE I
VIRGINIA DEPARTMENT OF TRANSPORTATION

WING	SIZE	WV3						SIZE	WV4					
		a			LENGTH				a			LENGTH		
		From	To	Vary By	From	To	Vary By		From	To	Vary By	From	To	Vary By
A	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
B	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
C	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
D	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
E	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
F	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
G	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
H	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
I	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
J	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
K	4	9'-11 ¹ / ₄ "	8'-8 ¹ / ₄ "	0'-3 ³ / ₄ "	11'-11"	10'-8"	0'-3 ³ / ₄ "	--	-----	-----	-----	-----	-----	-----
L	4	10'-9 ¹ / ₄ "	9'- ³ / ₄ "	0'-4 ¹ / ₈ "	12'-5"	11'- ¹ / ₂ "	0'-4 ¹ / ₈ "	--	-----	-----	-----	-----	-----	-----
M	5	10'-11 ³ / ₄ "	9'-6 ³ / ₄ "	0'-4 ¹ / ₄ "	13'-0"	11'-7"	0'-4 ¹ / ₄ "	--	-----	-----	-----	-----	-----	-----
N	5	11'-5 ³ / ₄ "	10'- ³ / ₄ "	0'-4 ¹ / ₄ "	13'-6"	12'-1"	0'-4 ¹ / ₄ "	--	-----	-----	-----	-----	-----	-----
O	5	11'-11 ³ / ₄ "	9'-10 ¹ / ₄ "	0'-4 ¹ / ₄ "	14'-0"	11'-10 ¹ / ₂ "	0'-4 ¹ / ₄ "	--	-----	-----	-----	-----	-----	-----
P	6	12'-5 ⁵ / ₈ "	9'-11 ¹ / ₈ "	0'-4 ¹ / ₄ "	14'-7"	12'-1 ¹ / ₄ "	0'-4 ¹ / ₄ "	--	-----	-----	-----	-----	-----	-----
Q	6	12'-11 ⁵ / ₈ "	10'-1 ⁵ / ₈ "	0'-4 ¹ / ₄ "	15'-1"	12'-3"	0'-4 ¹ / ₄ "	--	-----	-----	-----	-----	-----	-----
R	5	11'-2 ³ / ₄ "	9'- ¹ / ₂ "	0'-4 ³ / ₈ "	13'-3"	11'- ³ / ₄ "	0'-4 ³ / ₈ "	5	13'-5 ³ / ₄ "	11'-6 ³ / ₄ "	0'-2 ¹ / ₈ "	15'-6"	13'-7"	0'-2 ¹ / ₈ "
S	5	11'-8 ³ / ₄ "	9'-6 ¹ / ₂ "	0'-4 ³ / ₈ "	13'-9"	11'-6 ³ / ₄ "	0'-4 ³ / ₈ "	5	13'-11 ³ / ₄ "	12'- ³ / ₄ "	0'-2 ¹ / ₈ "	16'-0"	14'-1"	0'-2 ¹ / ₈ "
T	5	12'-8 ³ / ₄ "	10'-8"	0'-4 ¹ / ₈ "	14'-9"	12'-8 ¹ / ₄ "	0'-4 ¹ / ₈ "	5	14'-11 ³ / ₄ "	13'- ³ / ₄ "	0'-2 ¹ / ₈ "	17'-0"	15'-1"	0'-2 ¹ / ₈ "
U	5	12'-9 ³ / ₄ "	10'-4"	0'-4 ¹ / ₄ "	14'-10"	12'-4 ¹ / ₄ "	0'-4 ¹ / ₄ "	6	15'-5 ⁵ / ₈ "	13'-2 ¹ / ₈ "	0'-2 ³ / ₄ "	17'-7"	15'-3 ¹ / ₂ "	0'-2 ³ / ₄ "
V	5	12'-9 ³ / ₄ "	10'-4"	0'-4 ¹ / ₄ "	14'-10"	12'-4 ¹ / ₄ "	0'-4 ¹ / ₄ "	6	15'-11 ⁵ / ₈ "	13'-2 ⁵ / ₈ "	0'-2 ³ / ₄ "	18'-1"	15'-4"	0'-2 ³ / ₄ "
W	6	13'-3 ⁵ / ₈ "	10'-9 ⁵ / ₈ "	0'-4 ¹ / ₄ "	15'-5"	12'-11 ¹ / ₄ "	0'-4 ¹ / ₄ "	6	16'-5 ⁵ / ₈ "	13'-7 ¹ / ₈ "	0'-2 ¹ / ₈ "	18'-7"	15'-8 ¹ / ₂ "	0'-2 ¹ / ₈ "
X	6	13'-9 ⁵ / ₈ "	11'-3 ⁵ / ₈ "	0'-4 ¹ / ₄ "	15'-11"	13'-5 ¹ / ₄ "	0'-4 ¹ / ₄ "	7	16'-11 ⁵ / ₈ "	14'-1 ¹ / ₈ "	0'-2 ¹ / ₈ "	19'-2"	16'-3 ¹ / ₂ "	0'-2 ¹ / ₈ "
Y	6	14'-3 ⁵ / ₈ "	11'-9 ⁵ / ₈ "	0'-4 ¹ / ₄ "	16'-5"	13'-11 ¹ / ₄ "	0'-4 ¹ / ₄ "	6	17'-5 ⁵ / ₈ "	14'-7 ¹ / ₈ "	0'-2 ¹ / ₈ "	19'-7"	16'-8 ¹ / ₂ "	0'-2 ¹ / ₈ "
Z	6	14'-9 ⁵ / ₈ "	12'-3 ⁵ / ₈ "	0'-4 ¹ / ₄ "	16'-11"	14'-5 ¹ / ₄ "	0'-4 ¹ / ₄ "	7	17'-11 ⁵ / ₈ "	15'-1 ¹ / ₈ "	0'-2 ¹ / ₈ "	20'-2"	17'-3 ¹ / ₂ "	0'-2 ¹ / ₈ "
AA	7	15'-3 ⁵ / ₈ "	11'-9 ¹ / ₈ "	0'-4 ¹ / ₄ "	17'-6"	13'-11 ¹ / ₂ "	0'-4 ¹ / ₄ "	7	18'-5 ⁵ / ₈ "	15'-7 ¹ / ₈ "	0'-2 ¹ / ₈ "	20'-8"	17'-9 ¹ / ₂ "	0'-2 ¹ / ₈ "
BB	7	15'-9 ⁵ / ₈ "	12'-3 ⁵ / ₈ "	0'-4 ¹ / ₄ "	18'-0"	14'-5 ¹ / ₂ "	0'-4 ¹ / ₄ "	7	18'-11 ⁵ / ₈ "	16'-1 ¹ / ₈ "	0'-2 ¹ / ₈ "	21'-2"	18'-3 ¹ / ₂ "	0'-2 ¹ / ₈ "
CC	7	16'-3 ⁵ / ₈ "	12'-4 ⁵ / ₈ "	0'-4 ¹ / ₄ "	18'-6"	14'-7 ¹ / ₄ "	0'-4 ¹ / ₄ "	7	19'-5 ⁵ / ₈ "	16'-7 ¹ / ₈ "	0'-2 ¹ / ₈ "	21'-8"	18'-9 ¹ / ₂ "	0'-2 ¹ / ₈ "
DD	7	16'-9 ⁵ / ₈ "	12'-10 ⁷ / ₈ "	0'-4 ¹ / ₄ "	19'-0"	15'-1 ¹ / ₄ "	0'-4 ¹ / ₄ "	8	20'-5 ¹ / ₂ "	17'-1 ¹ / ₄ "	0'-2 ¹ / ₈ "	22'-9"	19'-4 ³ / ₄ "	0'-2 ¹ / ₈ "
EE	7	16'-9 ⁵ / ₈ "	12'-10 ⁷ / ₈ "	0'-4 ¹ / ₄ "	19'-0"	15'-1 ¹ / ₄ "	0'-4 ¹ / ₄ "	8	20'-11 ¹ / ₂ "	17'-1 ¹ / ₂ "	0'-2 ¹ / ₈ "	23'-3"	19'-5"	0'-2 ¹ / ₈ "



WF3, WF5, WF7 WV1, WV3, WV4

TABLE B		
Bar Size	Pin Dia.	Z
#3	2 1/4"	4"
#4	3"	4 1/2"
#5	3 3/4"	5"
#6	4 1/2"	6"
#7	5 1/4"	7"
#8	6"	8"
#9	9"	10 1/8"

TABLE C	
Bar Size	Splice Length
#4	1'-4"
#5	1'-8"
#6	1'-11"
#7	2'-4"
#8	3'-1"
#9	3'-11"

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 Cu. Yd.	Reinforcing Steel 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

WING	DIMENSIONS					BAR SPACINGS																			NO. WEEP HOLES			
	J	K	L	M	N	WV1		WV2		WV3		WV4		WH1		WH2		WF2		WF3		WF5		WF6		WF7		
						O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG		HH	JJ	KK
A	1'- 6"	4'- 0"	1'- 0"	6'- 6"	4'- 0"	6	6'- 0"	4	5'- 0"	--	----	--	----	--	----	1	1'- 3"	--	----	6	6'- 0"	--	----	4	5'- 0"	--	----	--
B	1'- 6"	4'- 6"	1'- 0"	7'- 6"	4'- 0"	7	7'- 0"	5	6'- 3"	--	----	--	----	1	0'- 6"	1	1'- 3"	--	----	7	7'- 0"	--	----	5	6'- 3"	--	----	--
C	1'- 6"	5'- 0"	1'- 0"	8'- 6"	4'- 0"	8	8'- 0"	6	7'- 6"	--	----	--	----	--	----	2	2'- 6"	--	----	8	8'- 0"	--	----	6	7'- 6"	--	----	--
D	1'- 6"	5'- 6"	1'- 0"	9'- 6"	4'- 0"	9	9'- 0"	7	8'- 9"	--	----	--	----	--	----	2	2'- 6"	--	----	9	9'- 0"	--	----	7	8'- 9"	--	----	--
E	1'- 6"	6'- 0"	1'- 0"	10'- 6"	4'- 0"	10	10'- 0"	8	10'- 0"	--	----	--	----	--	----	3	3'- 9"	--	----	10	10'- 0"	--	----	8	10'- 0"	--	----	--
F	1'- 6"	6'- 6"	1'- 0"	11'- 6"	4'- 6"	11	11'- 0"	8	10'- 0"	--	----	--	----	--	----	3	3'- 9"	--	----	11	11'- 0"	--	----	8	10'- 0"	--	----	--
G	1'- 6"	7'- 0"	1'- 0"	12'- 6"	4'- 6"	12	12'- 0"	9	11'- 3"	--	----	--	----	1	0'- 6"	3	3'- 9"	--	----	12	12'- 0"	--	----	9	11'- 3"	--	----	--
H	1'- 6"	7'- 6"	1'- 0"	14'- 0"	5'- 0"	13	13'- 0"	10	12'- 6"	--	----	--	----	--	----	4	5'- 0"	--	----	13	13'- 0"	--	----	10	12'- 6"	--	----	--
I	1'- 6"	8'- 0"	1'- 0"	15'- 0"	5'- 0"	14	14'- 0"	11	13'- 9"	--	----	--	----	--	----	4	5'- 0"	--	----	14	14'- 0"	--	----	11	13'- 9"	--	----	--
J	1'- 6"	8'- 6"	1'- 0"	16'- 0"	5'- 6"	15	15'- 0"	12	15'- 0"	--	----	--	----	--	----	5	6'- 3"	1	0'- 9"	15	15'- 0"	--	----	12	15'- 0"	--	----	--
K	1'- 6"	9'- 0"	1'- 0"	17'- 0"	6'- 0"	12	12'- 0"	13	16'- 3"	4	3'- 0"	--	----	--	----	5	6'- 3"	2	1'- 3"	12	12'- 0"	4	3'- 0"	13	16'- 3"	--	----	--
L	1'- 6"	9'- 6"	1'- 0"	18'- 0"	6'- 6"	13	13'- 0"	14	17'- 6"	4	3'- 0"	--	----	1	0'- 6"	5	6'- 3"	2	1'- 9"	13	13'- 0"	4	3'- 0"	14	17'- 6"	--	----	--
M	1'- 6"	10'- 0"	1'- 0"	19'- 0"	6'- 6"	14	14'- 0"	14	17'- 6"	4	3'- 0"	--	----	--	----	6	7'- 6"	2	1'- 9"	14	14'- 0"	4	3'- 0"	14	17'- 6"	--	----	--
N	1'- 6"	10'- 6"	1'- 0"	20'- 0"	7'- 0"	15	15'- 0"	15	18'- 9"	4	3'- 0"	--	----	--	----	6	7'- 6"	3	2'- 3"	14	14'- 0"	6	4'- 6"	15	18'- 9"	--	----	1
O	1'- 6"	11'- 0"	1'- 0"	21'- 6"	7'- 6"	15	15'- 0"	16	20'- 0"	6	4'- 6"	--	----	--	----	7	8'- 9"	3	2'- 9"	14	14'- 0"	8	6'- 0"	16	20'- 0"	--	----	1
P	1'- 6"	11'- 6"	1'- 0"	22'- 6"	7'- 6"	15	15'- 0"	17	21'- 3"	8	6'- 0"	--	----	--	----	7	8'- 9"	3	2'- 9"	13	13'- 0"	10	7'- 6"	17	21'- 3"	--	----	1
Q	1'- 6"	12'- 0"	1'- 0"	23'- 6"	8'- 0"	16	16'- 0"	18	22'- 6"	8	6'- 0"	--	----	1	0'- 6"	7	8'- 9"	4	3'- 3"	14	14'- 0"	10	7'- 6"	18	22'- 6"	--	----	1
R	1'- 6"	12'- 6"	1'- 0"	24'- 6"	8'- 6"	15	15'- 0"	19	23'- 9"	10	7'- 6"	--	----	--	----	8	10'- 0"	4	3'- 9"	14	14'- 0"	12	9'- 0"	19	23'- 9"	--	----	1
S	1'- 9"	13'- 0"	1'- 0"	25'- 6"	9'- 0"	16	16'- 0"	20	25'- 0"	5	3'- 9"	7	3'- 6"	--	----	8	10'- 0"	5	4'- 3"	13	13'- 0"	14	10'- 6"	20	25'- 0"	--	----	2
T	2'- 0"	13'- 6"	1'- 0"	26'- 6"	9'- 6"	15	15'- 0"	20	25'- 0"	7	5'- 3"	8	4'- 0"	--	----	9	11'- 3"	5	4'- 9"	15	15'- 0"	7	5'- 3"	20	25'- 0"	8	4'- 0"	2
U	2'- 0"	14'- 0"	1'- 0"	27'- 6"	10'- 0"	16	16'- 0"	21	26'- 3"	7	5'- 3"	8	4'- 0"	--	----	9	11'- 3"	6	5'- 3"	15	15'- 0"	7	5'- 3"	21	26'- 3"	10	5'- 0"	2
V	2'- 0"	14'- 6"	1'- 0"	28'- 6"	10'- 6"	15	15'- 0"	22	27'- 6"	9	6'- 9"	9	4'- 6"	1	0'- 6"	9	11'- 3"	6	5'- 9"	15	15'- 0"	7	5'- 3"	22	27'- 6"	12	6'- 0"	2
W	2'- 0"	15'- 0"	1'- 0"	29'- 6"	10'- 6"	16	16'- 0"	23	28'- 9"	9	6'- 9"	9	4'- 6"	--	----	10	12'- 6"	6	5'- 9"	15	15'- 0"	7	5'- 3"	23	28'- 9"	14	7'- 0"	2
X	2'- 0"	15'- 6"	1'- 0"	31'- 0"	11'- 0"	14	14'- 0"	24	30'- 0"	13	9'- 9"	10	5'- 0"	--	----	10	12'- 6"	7	6'- 3"	13	13'- 0"	11	8'- 3"	24	30'- 0"	15	7'- 6"	3
Y	2'- 0"	16'- 0"	1'- 0"	32'- 0"	11'- 6"	15	15'- 0"	25	31'- 3"	13	9'- 9"	10	5'- 0"	--	----	11	13'- 9"	7	6'- 9"	14	14'- 0"	11	8'- 3"	25	31'- 3"	15	7'- 6"	3
Z	2'- 0"	16'- 6"	1'- 0"	33'- 0"	12'- 0"	15	15'- 0"	26	32'- 6"	13	9'- 9"	12	6'- 0"	--	----	11	13'- 9"	8	7'- 3"	15	15'- 0"	11	8'- 3"	26	32'- 6"	15	7'- 6"	3
AA	2'- 0"	17'- 0"	1'- 0"	34'- 0"	12'- 6"	15	15'- 0"	26	32'- 6"	13	9'- 9"	14	7'- 0"	1	0'- 6"	11	13'- 9"	8	7'- 9"	15	15'- 0"	11	8'- 3"	26	32'- 6"	17	8'- 6"	3
BB	2'- 0"	17'- 6"	1'- 0"	35'- 0"	13'- 0"	15	15'- 0"	27	33'- 9"	13	9'- 9"	16	8'- 0"	--	----	12	15'- 0"	9	8'- 3"	14	14'- 0"	15	11'- 3"	27	33'- 9"	15	7'- 6"	4
CC	2'- 0"	18'- 0"	1'- 0"	36'- 0"	13'- 0"	16	16'- 0"	28	35'- 0"	13	9'- 9"	16	8'- 0"	--	----	12	15'- 0"	9	8'- 3"	15	15'- 0"	15	11'- 3"	28	35'- 0"	15	7'- 6"	4
DD	2'- 0"	18'- 6"	1'- 0"	37'- 0"	13'- 6"	14	14'- 0"	29	36'- 3"	17	12'- 9"	16	8'- 0"	--	----	13	16'- 3"	9	8'- 9"	16	16'- 0"	15	11'- 3"	29	36'- 3"	15	7'- 6"	4
EE	2'- 0"	19'- 0"	1'- 0"	38'- 6"	14'- 0"	15	15'- 0"	30	37'- 6"	17	12'- 9"	17	8'- 6"	--	----	13	16'- 3"	10	9'- 3"	16	16'- 0"	15	11'- 3"	30	37'- 6"	18	9'- 0"	4

WING	WF 1			WF 2				WF 3						WF 4		
	SIZE	LENGTH	SIZE	LENGTH				SIZE	α			LENGTH			SIZE	LENGTH
				From	To	Vary By	# Ea		From	To	Vary By	From	To	Vary By		
A	4	6'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 6"	0'- 2"	4'- 6"	3'- 6"	0'- 2"	4	6'- 1"
B	4	7'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 6 ⁵ / ₈ "	0'- 1 ⁵ / ₈ "	4'- 6"	3'- 6 ⁵ / ₈ "	0'- 1 ⁵ / ₈ "	4	7'- 1"
C	4	8'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 6"	0'- 1 ¹ / ₂ "	4'- 6"	3'- 6"	0'- 1 ¹ / ₂ "	4	8'- 1"
D	4	9'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 6 ³ / ₄ "	0'- 1 ¹ / ₄ "	4'- 6"	3'- 6 ³ / ₄ "	0'- 1 ¹ / ₄ "	4	9'- 1"
E	4	10'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 6 ³ / ₄ "	0'- 1 ¹ / ₈ "	4'- 6"	3'- 6 ³ / ₄ "	0'- 1 ¹ / ₈ "	4	10'- 1"
F	4	11'- 0"	4	3'- 7"	-----	-----	2	4	4'- 0"	2'- 6 ¹ / ₈ "	0'- 1 ⁵ / ₈ "	5'- 0"	3'- 6 ¹ / ₈ "	0'- 1 ⁵ / ₈ "	4	11'- 1"
G	4	12'- 0"	4	3'-11"	-----	-----	2	4	4'- 0"	2'- 6"	0'- 1 ¹ / ₂ "	5'- 0"	3'- 6"	0'- 1 ¹ / ₂ "	4	12'- 1"
H	4	13'- 6"	4	6'- 9"	-----	-----	2	4	4'- 6"	2'- 7 ¹ / ₄ "	0'- 1 ³ / ₄ "	5'- 6"	3'- 7 ¹ / ₄ "	0'- 1 ³ / ₄ "	4	13'- 8"
I	4	14'- 6"	4	7'- 3"	-----	-----	2	4	4'- 6"	2'- 7 ¹ / ₄ "	0'- 1 ⁵ / ₈ "	5'- 6"	3'- 7 ¹ / ₄ "	0'- 1 ⁵ / ₈ "	4	14'- 8"
J	4	15'- 6"	4	9'- 4"	4'- 6 ³ / ₈ "	4'- 9 ⁵ / ₈ "	2	4	4'-11"	2'- 6 ¹ / ₈ "	0'- 1 ⁷ / ₈ "	5'-11"	3'- 6 ¹ / ₈ "	0'- 1 ⁷ / ₈ "	4	15'- 8"
K	4	16'- 6"	4	11'- 1"	3'-11 ³ / ₄ "	3'- 6 ⁵ / ₈ "	2	4	4'- 9"	2'- 7 ¹ / ₂ "	0'- 2 ¹ / ₈ "	5'- 9"	3'- 7 ¹ / ₂ "	0'- 2 ¹ / ₈ "	4	16'- 9"
L	4	17'- 6"	4	12'- 7"	3'- 7"	4'- 6"	2	4	5'- 2"	2'- 7 ¹ / ₈ "	0'- 2 ³ / ₈ "	6'- 2"	3'- 7 ¹ / ₈ "	0'- 2 ³ / ₈ "	4	17'-10"
M	4	18'- 6"	4	13'- 4"	3'- 9 ¹ / ₂ "	4'- 9 ¹ / ₄ "	2	4	5'- 3"	2'- 7 ¹ / ₂ "	0'- 2 ¹ / ₄ "	6'- 3"	3'- 7 ¹ / ₂ "	0'- 2 ¹ / ₄ "	4	18'-10"
N	4	19'- 6"	4	14'- 9"	3'- 5 ⁵ / ₈ "	3'- 9 ¹ / ₈ "	2	4	5'- 4"	2'- 6 ³ / ₄ "	0'- 2 ³ / ₈ "	6'- 4"	3'- 6 ³ / ₄ "	0'- 2 ³ / ₈ "	4	19'-11"
O	4	21'- 0"	4	16'- 5"	3'- 3 ⁷ / ₈ "	4'- 4 ³ / ₈ "	2	4	5'- 6"	2'- 7"	0'- 2 ¹ / ₂ "	6'- 6"	3'- 7"	0'- 2 ¹ / ₂ "	4	21'- 5"
P	4	22'- 0"	4	17'- 3"	3'- 5 ⁵ / ₈ "	4'- 7 ¹ / ₈ "	2	4	5'- 3"	2'- 8 ¹ / ₈ "	0'- 2 ³ / ₈ "	6'- 3"	3'- 8 ¹ / ₈ "	0'- 2 ³ / ₈ "	4	22'- 5"
Q	4	23'- 0"	4	18'- 6"	3'- 3"	3'- 9 ³ / ₄ "	2	4	5'- 8"	2'- 7 ¹ / ₄ "	0'- 2 ⁵ / ₈ "	6'- 8"	3'- 7 ¹ / ₄ "	0'- 2 ⁵ / ₈ "	4	23'- 6"
R	4	24'- 0"	4	19'- 9"	3'- 1 ¹ / ₂ "	4'- 2 ¹ / ₈ "	2	4	5'- 8"	2'- 7 ¹ / ₄ "	0'- 2 ⁵ / ₈ "	6'- 8"	3'- 7 ¹ / ₄ "	0'- 2 ⁵ / ₈ "	4	24'- 7"
S	4	25'- 0"	4	21'- 0"	2'-11 ¹ / ₈ "	3'- 7 ³ / ₈ "	2	4	5'- 9"	2'- 7 ⁵ / ₈ "	0'- 2 ⁷ / ₈ "	6'- 9"	3'- 7 ⁵ / ₈ "	0'- 2 ⁷ / ₈ "	4	25'- 8"
T	4	26'- 0"	4	22'- 2"	2'- 9 ¹ / ₂ "	3'-10 ¹ / ₂ "	2	4	6'- 3"	2'- 6"	0'- 3"	7'- 3"	3'- 6"	0'- 3"	4	26'- 9"
U	4	27'- 0"	4	23'- 3"	2'- 8 ¹ / ₄ "	3'- 5 ¹ / ₈ "	2	4	6'- 4"	2'- 7"	0'- 3"	7'- 4"	3'- 7"	0'- 3"	4	27'-10"
V	4	28'- 0"	4	24'- 5"	2'- 6 ¹ / ₂ "	3'- 7 ³ / ₄ "	2	4	6'- 6"	2'- 7 ¹ / ₈ "	0'- 3 ¹ / ₈ "	7'- 6"	3'- 7 ¹ / ₈ "	0'- 3 ¹ / ₈ "	4	28'-11"
W	4	29'- 0"	4	25'- 3"	2'- 8 ¹ / ₄ "	3'- 9 ¹ / ₈ "	2	4	6'- 4"	2'- 7"	0'- 3"	7'- 4"	3'- 7"	0'- 3"	4	29'-11"
X	4	30'- 6"	4	26'-10"	2'- 7 ¹ / ₂ "	3'- 5 ¹ / ₂ "	2	4	5'-11"	2'- 6 ³ / ₈ "	0'- 3 ¹ / ₈ "	6'-11"	3'- 6 ³ / ₈ "	0'- 3 ¹ / ₈ "	4	31'- 6"
Y	4	31'- 6"	4	27'-11"	2'- 6 ¹ / ₂ "	3'- 7 ¹ / ₂ "	2	4	6'- 3"	2'- 7 ¹ / ₄ "	0'- 3 ¹ / ₈ "	7'- 3"	3'- 7 ¹ / ₄ "	0'- 3 ¹ / ₈ "	4	32'- 7"
Z	4	32'- 6"	4	29'- 1"	2'- 6"	3'- 3 ⁷ / ₈ "	2	4	6'- 8"	2'- 7 ¹ / ₄ "	0'- 3 ¹ / ₄ "	7'- 8"	3'- 7 ¹ / ₄ "	0'- 3 ¹ / ₄ "	4	33'- 8"
AA	4	33'- 6"	4	30'- 2"	2'- 5"	3'- 5 ⁵ / ₈ "	2	4	6'- 9"	2'- 6 ³ / ₈ "	0'- 3 ³ / ₈ "	7'- 9"	3'- 6 ³ / ₈ "	0'- 3 ³ / ₈ "	4	34'- 9"
BB	4	34'- 6"	4	31'- 3"	2'- 4 ¹ / ₂ "	3'- 2 ¹ / ₂ "	2	4	6'- 7"	2'- 6"	0'- 3 ¹ / ₂ "	7'- 7"	3'- 6"	0'- 3 ¹ / ₂ "	4	35'-11"
CC	4	35'- 6"	4	32'- 1"	2'- 5 ¹ / ₂ "	3'- 3 ¹ / ₂ "	2	4	6'- 9"	2'- 6 ³ / ₈ "	0'- 3 ³ / ₈ "	7'- 9"	3'- 6 ³ / ₈ "	0'- 3 ³ / ₈ "	4	36'-10"
DD	4	36'- 6"	4	33'- 2"	2'- 3 ⁷ / ₈ "	3'- 5 ¹ / ₈ "	2	4	7'- 1"	2'- 7"	0'- 3 ³ / ₈ "	8'- 1"	3'- 7"	0'- 3 ³ / ₈ "	4	37'-11"
EE	4	38'- 0"	4	34'- 9"	2'- 4 ¹ / ₄ "	3'- 2 ¹ / ₈ "	2	4	7'- 2"	2'- 6"	0'- 3 ¹ / ₂ "	8'- 2"	3'- 6"	0'- 3 ¹ / ₂ "	4	39'- 6"

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WING	SIZE	WF5						WF6			WF7						WH1		WH3			
		a			LENGTH			SIZE	LENGTH			a			LENGTH			SIZE	LENGTH	SIZE	LENGTH	
		From	To	Vary By	From	To	Vary By		From	To	Vary By	From	To	Vary By	From	To	Vary By					
A	--	----	----	----	----	----	4	3'- 6"	2'- 8"	0'- 2 1/2"	--	----	----	----	----	----	----	4	6'- 0"	4	6'- 8"	
B	--	----	----	----	----	----	4	3'- 6"	2'- 7 3/8"	0'- 2 1/8"	--	----	----	----	----	----	----	4	7'- 0"	4	7'- 9"	
C	--	----	----	----	----	----	4	3'- 6"	2'- 6 3/4"	0'- 1 1/8"	--	----	----	----	----	----	----	4	8'- 0"	4	8'- 11"	
D	--	----	----	----	----	----	4	3'- 6"	2'- 6 5/8"	0'- 1 5/8"	--	----	----	----	----	----	----	4	9'- 0"	4	10'- 0"	
E	--	----	----	----	----	----	4	3'- 6"	2'- 6"	0'- 1 1/2"	--	----	----	----	----	----	----	4	10'- 0"	4	11'- 2"	
F	--	----	----	----	----	----	4	4'- 0"	2'- 8"	0'- 2"	--	----	----	----	----	----	----	4	11'- 0"	4	12'- 3"	
G	--	----	----	----	----	----	4	4'- 0"	2'- 7 1/8"	0'- 1 1/8"	--	----	----	----	----	----	----	4	12'- 0"	4	13'- 4"	
H	--	----	----	----	----	----	4	4'- 6"	2'- 7 1/2"	0'- 2 1/4"	--	----	----	----	----	----	----	4	13'- 6"	4	14'- 11"	
I	--	----	----	----	----	----	4	4'- 6"	2'- 8"	0'- 2"	--	----	----	----	----	----	----	4	14'- 6"	4	16'- 1"	
J	--	----	----	----	----	----	4	4'- 11"	2'- 8"	0'- 2 1/4"	--	----	----	----	----	----	----	4	15'- 6"	4	17'- 2"	
K	4	5'- 5"	4'- 11"	0'- 1 1/2"	6'- 5"	5'- 11"	0'- 1 1/2"	4	5'- 5"	2'- 6 1/8"	0'- 2 5/8"	--	----	----	----	----	----	4	16'- 6"	4	18'- 3"	
L	4	5'- 11"	5'- 4 1/2"	0'- 1 5/8"	6'- 11"	6'- 4 1/2"	0'- 1 5/8"	4	5'- 11"	2'- 6 3/4"	0'- 2 1/8"	--	----	----	----	----	----	4	17'- 6"	4	19'- 5"	
M	4	5'- 11"	5'- 5"	0'- 1 1/2"	6'- 11"	6'- 5"	0'- 1 1/2"	4	5'- 11"	2'- 8 1/2"	0'- 2 3/4"	--	----	----	----	----	----	4	18'- 6"	4	20'- 6"	
N	5	6'- 5 1/4"	5'- 6 3/4"	0'- 1 3/4"	7'- 7"	6'- 8 1/2"	0'- 1 3/4"	4	6'- 5"	2'- 8"	0'- 3"	--	----	----	----	----	----	4	19'- 6"	4	21'- 8"	
O	5	6'- 11 1/4"	5'- 8 1/4"	0'- 1 1/8"	8'- 1"	6'- 10"	0'- 1 1/8"	4	6'- 11"	2'- 9"	0'- 3 1/8"	--	----	----	----	----	----	4	21'- 0"	4	23'- 3"	
P	6	6'- 11 1/2"	5'- 6"	0'- 1 3/4"	8'- 4"	6'- 10 1/2"	0'- 1 3/4"	4	6'- 11"	2'- 8"	0'- 3"	--	----	----	----	----	----	4	22'- 0"	4	24'- 4"	
Q	6	7'- 5 1/2"	5'- 10 3/4"	0'- 1 1/8"	8'- 10"	7'- 3 1/4"	0'- 1 1/8"	4	7'- 5"	2'- 8 3/4"	0'- 3 1/8"	--	----	----	----	----	----	4	23'- 0"	4	25'- 5"	
R	6	7'- 11 1/2"	5'- 11 1/2"	0'- 2"	9'- 4"	7'- 4"	0'- 2"	4	7'- 11"	2'- 6 1/8"	0'- 3 3/8"	--	----	----	----	----	----	4	24'- 0"	4	26'- 7"	
S	6	8'- 5 1/2"	5'- 11 3/4"	0'- 2 1/8"	9'- 10"	7'- 4 1/4"	0'- 2 1/8"	4	8'- 5"	2'- 7"	0'- 3 1/2"	--	----	----	----	----	----	4	25'- 0"	4	27'- 8"	
T	5	7'- 9 1/4"	6'- 5 1/2"	0'- 2 1/4"	8'- 11"	7'- 7 1/4"	0'- 2 1/4"	4	8'- 11"	2'- 10 1/2"	0'- 3 5/8"	5	8'- 11 1/4"	7'- 11 1/4"	0'- 1 1/2"	10'- 1"	9'- 1"	0'- 1 1/2"	4	26'- 0"	4	28'- 10"
U	5	7'- 11 1/4"	6'- 7 1/2"	0'- 2 1/4"	9'- 1"	7'- 9 1/4"	0'- 2 1/4"	4	9'- 5"	2'- 10 1/4"	0'- 3 3/4"	5	9'- 5 1/4"	8'- 2 1/4"	0'- 1 1/2"	10'- 7"	9'- 4"	0'- 1 1/2"	4	27'- 0"	4	29'- 11"
V	5	8'- 2 1/4"	6'- 9 5/8"	0'- 2 3/8"	9'- 4"	7'- 11 3/8"	0'- 2 3/8"	4	9'- 11"	2'- 7"	0'- 4"	6	9'- 11 1/2"	8'- 4"	0'- 1 5/8"	11'- 4"	9'- 8 1/2"	0'- 1 5/8"	4	28'- 0"	4	31'- 0"
W	5	7'- 11 1/4"	6'- 7 1/2"	0'- 2 1/4"	9'- 1"	7'- 9 1/4"	0'- 2 1/4"	4	9'- 11"	2'- 8 3/4"	0'- 3 3/4"	6	9'- 11 1/2"	8'- 2 1/2"	0'- 1 1/2"	11'- 4"	9'- 7"	0'- 1 1/2"	4	29'- 0"	4	32'- 2"
X	6	8'- 3 1/2"	6'- 1 3/8"	0'- 2 3/8"	9'- 8"	7'- 5 5/8"	0'- 2 3/8"	4	10'- 5"	2'- 8"	0'- 3 3/8"	6	10'- 5 1/2"	8'- 5 1/8"	0'- 1 5/8"	11'- 10"	9'- 9 5/8"	0'- 1 5/8"	4	30'- 6"	4	33'- 9"
Y	6	8'- 8 1/2"	6'- 6 3/8"	0'- 2 3/8"	10'- 1"	7'- 10 7/8"	0'- 2 3/8"	4	10'- 11"	2'- 7"	0'- 4"	7	10'- 10 3/4"	8'- 10 3/8"	0'- 1 5/8"	12'- 6"	10'- 5 5/8"	0'- 1 5/8"	4	31'- 6"	4	34'- 10"
Z	6	9'- 2 1/2"	6'- 11"	0'- 2 1/2"	10'- 7"	8'- 3 1/2"	0'- 2 1/2"	4	11'- 5"	2'- 5 3/4"	0'- 4 1/8"	7	11'- 4 3/4"	9'- 4 3/8"	0'- 1 5/8"	13'- 0"	10'- 11 5/8"	0'- 1 5/8"	4	32'- 6"	4	35'- 11"
AA	6	9'- 4 1/2"	7'- 1"	0'- 2 1/2"	10'- 9"	8'- 5 1/2"	0'- 2 1/2"	4	11'- 11"	2'- 8 1/2"	0'- 4 1/4"	7	11'- 10 3/4"	9'- 7 1/8"	0'- 1 5/8"	13'- 6"	11'- 2 3/8"	0'- 1 5/8"	4	33'- 6"	4	37'- 1"
BB	7	10'- 3 1/4"	6'- 9 3/8"	0'- 2 5/8"	11'- 8"	8'- 4 5/8"	0'- 2 5/8"	4	12'- 5"	2'- 10 1/4"	0'- 4 1/4"	8	12'- 5"	10'- 2 3/4"	0'- 1 3/4"	14'- 3"	12'- 3 1/4"	0'- 1 3/4"	4	34'- 6"	4	38'- 2"
CC	7	10'- 1 3/4"	7'- 1 1/4"	0'- 2 1/2"	11'- 9"	8'- 3 1/2"	0'- 2 1/2"	4	12'- 5"	2'- 9 1/2"	0'- 4 1/8"	8	12'- 5"	10'- 4 5/8"	0'- 1 5/8"	14'- 3"	12'- 2 5/8"	0'- 1 5/8"	4	35'- 6"	4	39'- 4"
DD	7	10'- 6 3/4"	7'- 5 1/4"	0'- 2 1/2"	12'- 2"	9'- 1 1/2"	0'- 2 1/2"	4	12'- 11"	2'- 7 3/4"	0'- 4 1/4"	8	12'- 11"	10'- 8 3/4"	0'- 1 3/4"	14'- 9"	12'- 6 3/4"	0'- 1 3/4"	4	36'- 6"	4	40'- 5"
EE	7	10'- 7 3/4"	7'- 4 3/8"	0'- 2 5/8"	12'- 3"	8'- 11 5/8"	0'- 2 5/8"	4	13'- 5"	2'- 9 1/2"	0'- 4 1/4"	8	13'- 5"	10'- 9 1/2"	0'- 1 3/4"	15'- 3"	12'- 7 1/2"	0'- 1 3/4"	4	38'- 0"	4	42'- 0"

Sheet 5 of 7

1006.12

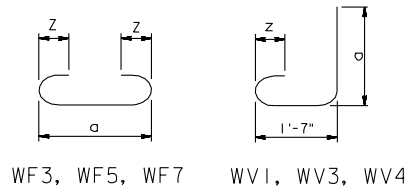
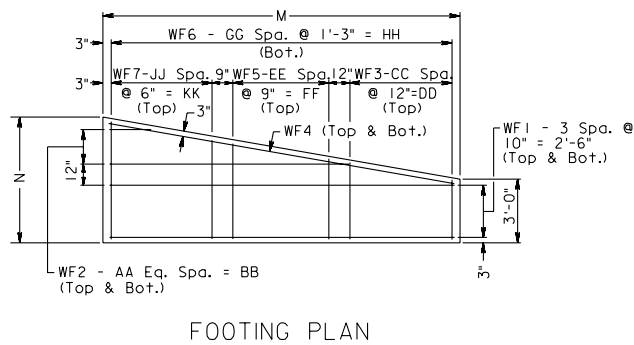
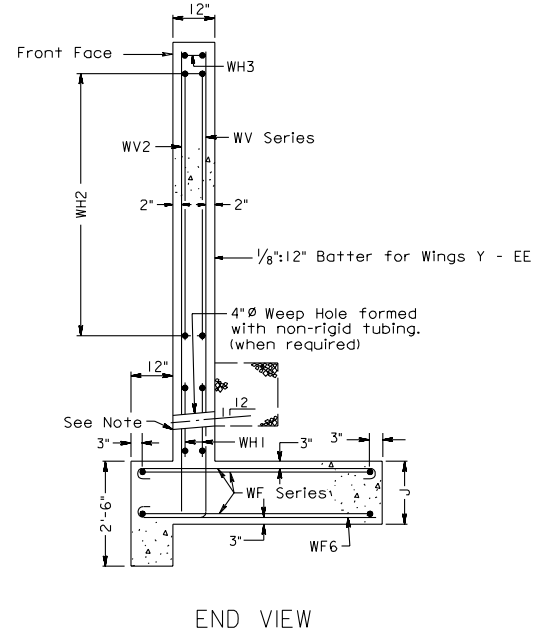
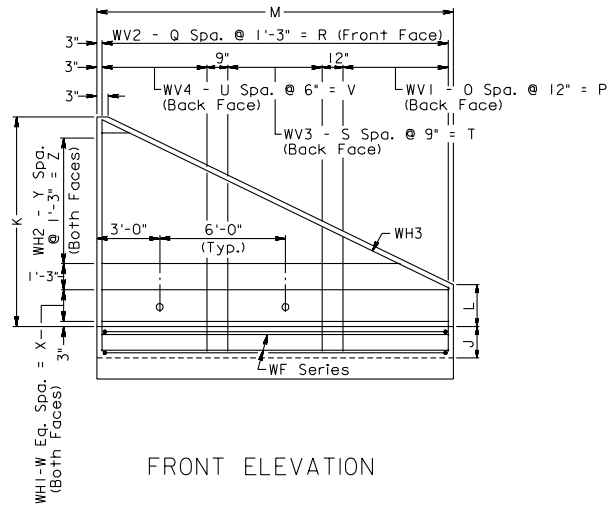
WING DETAILS
 1 1/2:1 FILL SLOPE - TYPE II
 VIRGINIA DEPARTMENT OF TRANSPORTATION

STRUCTURE
 AND
 BRIDGE
 DIVISION

WING	SIZE	WH2				WV1						WV2				
		LENGTH				#	Eq	a			LENGTH			LENGTH		
		From	To	Vary By	From			To	Vary By	From	To	Vary By	From	To	Vary By	
A	4	4'- 8"	2'- 3/8"	2'- 7 7/8"	2	4	4'-11 1/4"	2'- 3/4"	0'- 5 3/4"	6'-11"	4'- 1/2"	0'- 5 3/4"	4	5'- 0"	2'- 7"	0'- 7 1/4"
B	4	4'- 7"	2'- 1/8"	2'- 6 7/8"	2	4	5'- 5/4"	2'- 1"	0'- 5 3/4"	7'- 5"	4'- 3/4"	0'- 5 3/4"	4	5'- 6"	2'- 5 3/4"	0'- 7 1/4"
C	4	7'- 2"	2'- 0"	2'- 7"	2	4	5'-11 1/4"	2'- 1 1/4"	0'- 5 3/4"	7'-11"	4'- 1"	0'- 5 3/4"	4	6'- 0"	2'- 3 3/4"	0'- 7 3/8"
D	4	7'- 2"	2'- 0"	2'- 7"	2	4	6'- 5/4"	2'- 1 1/2"	0'- 5 3/4"	8'- 5"	4'- 1 1/4"	0'- 5 3/4"	4	6'- 6"	2'- 2 3/8"	0'- 7 3/8"
E	4	9'- 8"	1'-11 3/4"	2'- 6 3/4"	2	4	6'-11 1/4"	2'- 1/2"	0'- 5 7/8"	8'-11"	4'- 1/4"	0'- 5 7/8"	4	7'- 0"	2'- 1"	0'- 7 3/8"
F	4	9'- 8"	1'-11 3/4"	2'- 6 3/4"	2	4	7'- 5/4"	2'- 5/8"	0'- 5 7/8"	9'- 5"	4'- 3/8"	0'- 5 7/8"	4	7'- 6"	2'- 7"	0'- 7 3/8"
G	4	9'- 8"	1'-11 3/4"	2'- 6 3/4"	2	4	7'-11 1/4"	2'- 3/4"	0'- 5 7/8"	9'-11"	4'- 1/2"	0'- 5 7/8"	4	8'- 0"	2'- 5 5/8"	0'- 7 3/8"
H	4	12'- 8"	2'- 1/2"	2'- 7 7/8"	2	4	8'- 5/4"	2'- 4 7/8"	0'- 5 5/8"	10'- 5"	4'- 3 7/8"	0'- 5 5/8"	4	8'- 6"	2'- 6 3/4"	0'- 7 1/8"
I	4	12'- 7"	2'- 1/2"	2'- 7 5/8"	2	4	8'-11 1/4"	2'- 4 1/2"	0'- 5 5/8"	10'-11"	4'- 4 1/4"	0'- 5 5/8"	4	9'- 0"	2'- 5 5/8"	0'- 7 1/8"
J	4	15'- 2"	2'- 1/2"	2'- 7 1/2"	2	4	9'- 5/4"	2'- 4 7/8"	0'- 5 5/8"	11'- 5"	4'- 4 5/8"	0'- 5 5/8"	4	9'- 6"	2'- 4 1/2"	0'- 7 1/8"
K	4	15'- 1"	2'- 3/4"	2'- 7 1/4"	2	4	8'- 1 1/4"	2'- 4 1/4"	0'- 5 3/4"	10'- 1"	4'- 4"	0'- 5 3/4"	4	10'- 0"	2'- 1 3/4"	0'- 7 1/4"
L	4	15'- 1"	2'- 1/8"	2'- 7 3/8"	2	4	8'- 6 1/4"	2'- 3 1/2"	0'- 5 3/4"	10'- 6"	4'- 3 1/2"	0'- 5 3/4"	4	10'- 6"	2'- 1/2"	0'- 7 1/4"
M	4	17'- 8"	2'- 1/2"	2'- 7 1/4"	2	4	9'- 1/4"	2'- 3 3/4"	0'- 5 3/4"	11'- 0"	4'- 3 1/2"	0'- 5 3/4"	4	11'- 0"	2'- 6 1/2"	0'- 7 1/4"
N	4	17'- 7"	2'- 1/4"	2'- 7 1/8"	2	4	9'- 6 1/4"	2'- 4"	0'- 5 3/4"	11'- 6"	4'- 3 3/4"	0'- 5 3/4"	4	11'- 6"	2'- 5 1/4"	0'- 7 1/4"
O	4	20'- 8"	2'- 7/8"	2'- 7 7/8"	2	4	9'- 4 1/4"	2'- 3 7/8"	0'- 5 5/8"	11'- 4"	4'- 3 5/8"	0'- 5 5/8"	4	12'- 0"	2'- 6"	0'- 7 1/8"
P	4	20'- 7"	2'- 3/4"	2'- 7 3/4"	2	4	9'- 2 1/4"	2'- 1 7/8"	0'- 5 5/8"	11'- 2"	4'- 1 5/8"	0'- 5 5/8"	4	12'- 6"	2'- 4 7/8"	0'- 7 1/8"
Q	4	20'- 7"	2'- 3/4"	2'- 7 3/4"	2	4	9'- 8 1/4"	2'- 1/4"	0'- 5 3/4"	11'- 8"	4'- 0"	0'- 5 3/4"	4	13'- 0"	2'- 3 3/4"	0'- 7 1/8"
R	4	23'- 2"	2'- 1"	2'- 7 5/8"	2	4	9'- 5 1/4"	2'- 4 7/8"	0'- 5 5/8"	11'- 5"	4'- 4 5/8"	0'- 5 5/8"	4	13'- 6"	2'- 2 5/8"	0'- 7 1/8"
S	4	23'- 1"	2'- 1"	2'- 7 1/2"	2	4	9'-11 1/4"	2'- 3 1/4"	0'- 5 3/4"	11'-11"	4'- 3"	0'- 5 3/4"	4	14'- 3"	2'- 4 1/2"	0'- 7 1/8"
T	4	25'- 8"	2'- 1/2"	2'- 7 1/2"	2	4	9'- 9 1/4"	2'- 7"	0'- 5 3/4"	11'- 9"	4'- 6 3/4"	0'- 5 3/4"	4	15'- 0"	3'- 1 1/2"	0'- 7 1/8"
U	4	25'- 7"	2'- 5/8"	2'- 7 3/8"	2	4	10'- 2 1/4"	2'- 6 1/4"	0'- 5 3/4"	12'- 2"	4'- 6"	0'- 5 3/4"	4	15'- 6"	3'- 3/8"	0'- 7 1/8"
V	4	25'- 7"	2'- 5/8"	2'- 7 3/8"	2	4	9'- 9 1/4"	2'- 7"	0'- 5 3/4"	11'- 9"	4'- 6 3/4"	0'- 5 3/4"	4	16'- 0"	2'-11 1/4"	0'- 7 1/8"
W	4	28'- 2"	2'- 1/4"	2'- 7 3/8"	2	4	10'- 3 1/4"	2'- 7 1/4"	0'- 5 3/4"	12'- 3"	4'- 7"	0'- 5 3/4"	4	16'- 6"	2'- 7 1/4"	0'- 7 1/4"
X	4	28'- 7"	2'- 1/4"	2'- 7 3/8"	2	4	9'- 2 1/4"	2'- 7 1/2"	0'- 5 5/8"	11'- 2"	4'- 7 1/4"	0'- 5 5/8"	4	17'- 0"	2'- 9"	0'- 7 1/8"
Y	4	31'- 2"	2'- 3/4"	2'- 7 3/4"	2	4	9'- 8 1/4"	2'- 7 7/8"	0'- 5 5/8"	11'- 8"	4'- 7 5/8"	0'- 5 5/8"	4	17'- 6"	2'- 7 7/8"	0'- 7 1/8"
Z	4	31'- 1"	2'- 1 1/8"	2'- 7 5/8"	2	4	9'- 8 1/4"	2'- 7 7/8"	0'- 5 5/8"	11'- 8"	4'- 7 5/8"	0'- 5 5/8"	4	18'- 0"	2'- 6 3/4"	0'- 7 1/8"
AA	4	31'- 1"	2'- 1 1/8"	2'- 7 5/8"	2	4	9'- 8 1/4"	2'- 7 7/8"	0'- 5 5/8"	11'- 8"	4'- 7 5/8"	0'- 5 5/8"	4	18'- 6"	3'- 3/4"	0'- 7 1/8"
BB	4	33'- 8"	2'- 1/2"	2'- 7 5/8"	2	4	9'- 8 1/4"	2'- 7 7/8"	0'- 5 5/8"	11'- 8"	4'- 7 5/8"	0'- 5 5/8"	4	19'- 0"	2'-11 5/8"	0'- 7 1/8"
CC	4	33'- 7"	2'- 1"	2'- 7 1/2"	2	4	10'- 2 1/4"	2'- 6 1/4"	0'- 5 3/4"	12'- 2"	4'- 6"	0'- 5 3/4"	4	19'- 6"	2'-10 1/2"	0'- 7 1/8"
DD	4	36'- 2"	2'- 1/2"	2'- 7 1/2"	2	4	9'- 3 1/4"	2'- 6 3/4"	0'- 5 3/4"	11'- 3"	4'- 6 1/2"	0'- 5 3/4"	4	20'- 0"	2'- 9 3/8"	0'- 7 1/8"
EE	4	36'- 7"	2'- 5/8"	2'- 7 7/8"	2	4	9'- 8 1/4"	2'- 7 7/8"	0'- 5 5/8"	11'- 8"	4'- 7 5/8"	0'- 5 5/8"	4	20'- 6"	2'- 8 1/4"	0'- 7 1/8"

WING	SIZE	WV3						SIZE	WV4					
		a			LENGTH				a			LENGTH		
		From	To	Vary By	From	To	Vary By		From	To	Vary By	From	To	Vary By
A	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
B	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
C	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
D	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
E	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
F	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
G	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
H	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
I	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
J	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
K	4	9'-11 1/4"	8'-6 1/4"	0'-4 1/4"	11'-11"	10'-6"	0'-4 1/4"	--	-----	-----	-----	-----	-----	-----
L	4	10'-5 1/4"	9'-1/4"	0'-4 1/4"	12'-5"	11'-0"	0'-4 1/4"	--	-----	-----	-----	-----	-----	-----
M	5	10'-11 3/4"	9'-6 1/4"	0'-4 3/8"	13'-0"	11'-6 1/2"	0'-4 3/8"	--	-----	-----	-----	-----	-----	-----
N	5	11'-5 3/4"	10'-1/4"	0'-4 3/8"	13'-6"	12'-1/2"	0'-4 3/8"	--	-----	-----	-----	-----	-----	-----
O	5	11'-11 3/4"	9'-10 1/4"	0'-4 1/4"	14'-0"	11'-10 1/2"	0'-4 1/4"	--	-----	-----	-----	-----	-----	-----
P	6	12'-5 5/8"	9'-7 5/8"	0'-4 1/4"	14'-7"	11'-9"	0'-4 1/4"	--	-----	-----	-----	-----	-----	-----
Q	6	12'-11 5/8"	10'-1 5/8"	0'-4 1/4"	15'-1"	12'-3"	0'-4 1/4"	--	-----	-----	-----	-----	-----	-----
R	6	13'-5 5/8"	9'-11 1/8"	0'-4 1/4"	15'-7"	12'-1/2"	0'-4 1/4"	--	-----	-----	-----	-----	-----	-----
S	5	12'-2 3/4"	10'-4 7/8"	0'-4 3/8"	14'-3"	12'-5 1/8"	0'-4 3/8"	5	14'-2 3/4"	12'-6 5/8"	0'-2 7/8"	16'-3"	14'-6 7/8"	0'-2 7/8"
T	5	12'-8 3/4"	10'-2 1/8"	0'-4 3/8"	14'-9"	12'-2 3/8"	0'-4 3/8"	5	14'-11 3/4"	13'-3/4"	0'-2 7/8"	17'-0"	15'-1"	0'-2 7/8"
U	6	13'-2 5/8"	10'-8"	0'-4 3/8"	15'-4"	12'-9 3/8"	0'-4 3/8"	6	15'-5 5/8"	13'-6 5/8"	0'-2 7/8"	17'-7"	15'-8"	0'-2 7/8"
V	6	13'-5 5/8"	10'-3 3/8"	0'-4 1/4"	15'-7"	12'-4 3/4"	0'-4 1/4"	6	15'-11 5/8"	13'-9 3/4"	0'-2 7/8"	18'-1"	15'-11 1/8"	0'-2 7/8"
W	6	13'-11 1/8"	10'-8 1/4"	0'-4 3/8"	16'-1"	12'-9 5/8"	0'-4 3/8"	6	16'-5 5/8"	14'-3 3/4"	0'-2 7/8"	18'-7"	16'-5 1/8"	0'-2 7/8"
X	6	14'-3 5/8"	9'-8 3/8"	0'-4 1/4"	16'-5"	11'-9 3/4"	0'-4 1/4"	7	16'-11 5/8"	14'-6 7/8"	0'-2 7/8"	19'-2"	16'-9 1/4"	0'-2 7/8"
Y	6	14'-8 5/8"	10'-1 3/8"	0'-4 1/4"	16'-10"	12'-2 3/4"	0'-4 1/4"	6	17'-5 5/8"	15'-7/8"	0'-2 7/8"	19'-7"	17'-2 1/4"	0'-2 7/8"
Z	6	14'-9 5/8"	10'-2 3/8"	0'-4 1/4"	16'-11"	12'-3 3/4"	0'-4 1/4"	7	17'-11 5/8"	15'-1 1/8"	0'-2 7/8"	20'-2"	17'-3 1/2"	0'-2 7/8"
AA	6	14'-9 5/8"	10'-2 3/8"	0'-4 1/4"	16'-11"	12'-3 3/4"	0'-4 1/4"	7	18'-5 5/8"	15'-1 3/8"	0'-2 7/8"	20'-8"	17'-3 3/4"	0'-2 7/8"
BB	6	14'-9 5/8"	10'-2 3/8"	0'-4 1/4"	16'-11"	12'-3 3/4"	0'-4 1/4"	7	18'-11 5/8"	15'-1 5/8"	0'-2 7/8"	21'-2"	17'-4"	0'-2 7/8"
CC	7	15'-3 5/8"	10'-8 3/8"	0'-4 1/4"	17'-6"	12'-10 3/4"	0'-4 1/4"	7	19'-5 5/8"	15'-7 5/8"	0'-2 7/8"	21'-8"	17'-10"	0'-2 7/8"
DD	7	15'-9 5/8"	9'-9 3/8"	0'-4 1/4"	18'-0"	11'-11 3/4"	0'-4 1/4"	8	19'-11 1/2"	16'-1 1/2"	0'-2 7/8"	22'-3"	18'-5"	0'-2 7/8"
EE	7	16'-1 5/8"	10'-1 3/8"	0'-4 1/4"	18'-4"	12'-3 3/4"	0'-4 1/4"	8	20'-5 1/2"	16'-4 5/8"	0'-2 7/8"	22'-9"	18'-8 1/8"	0'-2 7/8"

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



Bar Size	Pin Dia.	Z
#3	2 1/4"	4"
#4	3"	4 1/2"
#5	3 3/4"	5"
#6	4 1/2"	6"
#7	5 1/4"	7"
#8	6"	8"
#9	9"	10 1/8"

Bar Size	Splice Length
#4	1'-4"
#5	1'-8"
#6	1'-11"
#7	2'-4"
#8	3'-1"
#9	3'-11"

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 Cu. Yd.	Reinforcing Steel 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
DD	45.675	4925.833
EE	48.208	5122.544

BCW-21

WING	DIMENSIONS					BAR SPACINGS																				NO. WEEP HOLES		
	J	K	L	M	N	WV1		WV2		WV3		WV4		WH1		WH2		WF2		WF3		WF5		WF6			WF7	
						O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH		JJ	KK
A	1'-6"	4'-0"	1'-6"	7'-0"	4'-0"	6	6'-0"	5	6'-3"	--	----	--	----	--	----	1	1'-3"	--	----	6	6'-0"	--	----	5	6'-3"	--	----	--
B	1'-6"	4'-6"	1'-6"	8'-0"	4'-0"	7	7'-0"	6	7'-6"	--	----	--	----	1	0'-6"	1	1'-3"	--	----	7	7'-0"	--	----	6	7'-6"	--	----	--
C	1'-6"	5'-0"	1'-9"	9'-0"	4'-0"	8	8'-0"	6	7'-6"	--	----	--	----	1	1'-0"	1	1'-3"	--	----	8	8'-0"	--	----	6	7'-6"	--	----	--
D	1'-6"	5'-6"	1'-9"	10'-0"	4'-0"	9	9'-0"	7	8'-9"	--	----	--	----	--	----	2	2'-6"	--	----	9	9'-0"	--	----	7	8'-9"	--	----	--
E	1'-6"	6'-0"	2'-0"	11'-0"	4'-0"	10	10'-0"	8	10'-0"	--	----	--	----	1	0'-9"	2	2'-6"	--	----	10	10'-0"	--	----	8	10'-0"	--	----	--
F	1'-6"	6'-6"	2'-0"	12'-0"	4'-0"	11	11'-0"	9	11'-3"	--	----	--	----	1	1'-3"	2	2'-6"	--	----	11	11'-0"	--	----	9	11'-3"	--	----	--
G	1'-6"	7'-0"	2'-3"	13'-0"	4'-6"	12	12'-0"	10	12'-6"	--	----	--	----	2	1'-9"	2	2'-6"	--	----	12	12'-0"	--	----	10	12'-6"	--	----	--
H	1'-6"	7'-6"	2'-3"	14'-0"	5'-0"	13	13'-0"	10	12'-6"	--	----	--	----	1	1'-0"	3	3'-9"	--	----	13	13'-0"	--	----	10	12'-6"	--	----	--
I	1'-6"	8'-0"	2'-6"	15'-0"	5'-0"	14	14'-0"	11	13'-9"	--	----	--	----	2	1'-6"	3	3'-9"	--	----	14	14'-0"	--	----	11	13'-9"	--	----	--
J	1'-6"	8'-6"	2'-6"	16'-0"	5'-6"	15	15'-0"	12	15'-0"	--	----	--	----	2	2'-0"	3	3'-9"	1	0'-9"	15	15'-0"	--	----	12	15'-0"	--	----	--
K	1'-6"	9'-0"	2'-9"	17'-0"	6'-0"	16	16'-0"	13	16'-3"	--	----	--	----	1	1'-3"	4	5'-0"	2	1'-3"	16	16'-0"	--	----	13	16'-3"	--	----	--
L	1'-6"	9'-6"	2'-9"	18'-0"	6'-0"	12	12'-0"	14	17'-6"	6	4'-6"	--	----	2	1'-9"	4	5'-0"	2	1'-3"	17	17'-0"	--	----	14	17'-6"	--	----	--
M	1'-6"	10'-0"	3'-0"	19'-0"	6'-6"	13	13'-0"	14	17'-6"	6	4'-6"	--	----	2	2'-3"	4	5'-0"	2	1'-9"	13	13'-0"	6	4'-6"	14	17'-6"	--	----	--
N	1'-6"	10'-6"	3'-6"	19'-0"	6'-6"	10	10'-0"	14	17'-6"	6	4'-6"	4	2'-0"	3	2'-9"	4	5'-0"	2	1'-9"	13	13'-0"	6	4'-6"	14	17'-6"	--	----	--
O	1'-6"	11'-0"	3'-6"	20'-0"	7'-0"	11	11'-0"	15	18'-9"	6	4'-6"	4	2'-0"	2	2'-0"	5	6'-3"	3	2'-3"	14	14'-0"	6	4'-6"	15	18'-9"	--	----	1
P	1'-6"	11'-6"	3'-9"	21'-0"	7'-6"	8	8'-0"	16	20'-0"	9	6'-9"	8	4'-0"	2	2'-6"	5	6'-3"	3	2'-9"	9	9'-0"	5	3'-9"	16	20'-0"	12	6'-0"	1
Q	1'-6"	12'-0"	3'-9"	22'-0"	7'-6"	9	9'-0"	17	21'-3"	9	6'-9"	8	4'-0"	3	3'-0"	5	6'-3"	3	2'-9"	10	10'-0"	5	3'-9"	17	21'-3"	12	6'-0"	1
R	1'-6"	12'-6"	4'-0"	23'-0"	8'-0"	10	10'-0"	18	22'-6"	9	6'-9"	8	4'-0"	3	3'-6"	5	6'-3"	4	3'-3"	11	11'-0"	5	3'-9"	18	22'-6"	12	6'-0"	1
S	1'-6"	13'-0"	4'-0"	24'-0"	8'-6"	11	11'-0"	18	22'-6"	9	6'-9"	8	4'-0"	3	2'-9"	6	7'-6"	4	3'-9"	12	12'-0"	5	3'-9"	18	22'-6"	12	6'-0"	1
T	1'-6"	13'-6"	4'-3"	25'-0"	8'-6"	12	12'-0"	19	23'-9"	9	6'-9"	8	4'-0"	3	3'-3"	6	7'-6"	4	3'-9"	9	9'-0"	7	5'-3"	19	23'-9"	17	8'-6"	2
U	1'-6"	14'-0"	4'-3"	26'-0"	9'-0"	12	12'-0"	20	25'-0"	9	6'-9"	10	5'-0"	3	3'-9"	6	7'-6"	5	4'-3"	11	11'-0"	11	8'-3"	20	25'-0"	9	4'-6"	2
V	1'-6"	14'-6"	4'-6"	27'-0"	9'-6"	10	10'-0"	21	26'-3"	13	9'-9"	10	5'-0"	3	3'-0"	7	8'-9"	5	4'-9"	11	11'-0"	11	8'-3"	21	26'-3"	11	5'-6"	2
W	1'-6"	15'-0"	4'-6"	28'-0"	10'-0"	11	11'-0"	22	27'-6"	13	9'-9"	10	5'-0"	3	3'-6"	7	8'-9"	6	5'-3"	11	11'-0"	11	8'-3"	22	27'-6"	13	6'-6"	2
X	1'-9"	15'-6"	4'-9"	29'-0"	11'-0"	11	11'-0"	22	27'-6"	13	9'-9"	12	6'-0"	4	4'-0"	7	8'-9"	7	6'-3"	9	9'-0"	15	11'-3"	22	27'-6"	13	6'-6"	2
Y	2'-0"	16'-0"	4'-9"	30'-0"	12'-0"	10	10'-0"	23	28'-9"	17	12'-9"	10	5'-0"	3	3'-3"	8	10'-0"	8	7'-3"	9	9'-0"	15	11'-3"	23	28'-9"	15	7'-6"	3
Z	2'-0"	16'-6"	5'-0"	31'-0"	12'-6"	10	10'-0"	24	30'-0"	17	12'-9"	12	6'-0"	3	3'-9"	8	10'-0"	8	7'-9"	9	9'-0"	15	11'-3"	24	30'-0"	17	8'-6"	3
AA	2'-0"	17'-0"	5'-0"	32'-0"	13'-0"	11	11'-0"	25	31'-3"	17	12'-9"	12	6'-0"	4	4'-3"	8	10'-0"	9	8'-3"	10	10'-0"	15	11'-3"	25	31'-3"	17	8'-6"	3
BB	2'-0"	17'-6"	5'-3"	33'-0"	14'-0"	12	12'-0"	26	32'-6"	17	12'-9"	12	6'-0"	4	4'-9"	8	10'-0"	10	9'-3"	11	11'-0"	15	11'-3"	26	32'-6"	17	8'-6"	3
CC	2'-0"	18'-0"	5'-3"	34'-0"	14'-6"	13	13'-0"	27	32'-6"	17	12'-9"	12	6'-0"	4	4'-0"	9	11'-3"	10	9'-9"	12	12'-0"	15	11'-3"	27	32'-6"	17	8'-6"	3
DD	2'-6"	18'-6"	5'-6"	35'-0"	15'-0"	12	12'-0"	27	33'-9"	17	12'-9"	16	8'-0"	4	4'-6"	9	11'-3"	11	10'-3"	10	10'-0"	19	14'-3"	27	33'-9"	17	8'-6"	4
EE	2'-6"	19'-0"	5'-6"	36'-0"	15'-6"	12	12'-0"	28	35'-0"	17	12'-9"	18	9'-0"	4	5'-0"	9	11'-3"	11	10'-9"	11	11'-0"	19	14'-3"	28	35'-0"	17	8'-6"	4

WING	WF 1		WF 2					WF 3						WF 4		
	SIZE	LENGTH	SIZE	LENGTH				SIZE	α			LENGTH			SIZE	LENGTH
				From	To	Vary By	# Ea		From	To	Vary By	From	To	Vary By		
A	4	6'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 7/2"	0'- 1 3/4"	4'- 6"	3'- 7/2"	0'- 1 3/4"	4	6'- 7"
B	4	7'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 7/2"	0'- 1 1/2"	4'- 6"	3'- 7/2"	0'- 1 1/2"	4	7'- 7"
C	4	8'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 7"	0'- 1 3/8"	4'- 6"	3'- 7"	0'- 1 3/8"	4	8'- 7"
D	4	9'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 6 3/4"	0'- 1 1/4"	4'- 6"	3'- 6 3/4"	0'- 1 1/4"	4	9'- 7"
E	4	10'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 6 3/4"	0'- 1 1/8"	4'- 6"	3'- 6 3/4"	0'- 1 1/8"	4	10'- 7"
F	4	11'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 7"	0'- 1"	4'- 6"	3'- 7"	0'- 1"	4	11'- 6"
G	4	12'- 6"	4	4'- 1"	-----	-----	2	4	4'- 0"	2'- 7/2"	0'- 1 3/8"	5'- 0"	3'- 7/2"	0'- 1 3/8"	4	12'- 7"
H	4	13'- 6"	4	6'- 9"	-----	-----	2	4	4'- 6"	2'- 7/4"	0'- 1 3/4"	5'- 6"	3'- 7/4"	0'- 1 3/4"	4	13'- 8"
I	4	14'- 6"	4	7'- 3"	-----	-----	2	4	4'- 6"	2'- 7/4"	0'- 1 5/8"	5'- 6"	3'- 7/4"	0'- 1 5/8"	4	14'- 8"
J	4	15'- 6"	4	9'- 4"	4'- 6 3/8"	4'- 9 5/8"	2	4	4'- 11"	2'- 6 1/8"	0'- 1 7/8"	5'- 11"	3'- 6 1/8"	0'- 1 7/8"	4	15'- 8"
K	4	16'- 6"	4	11'- 1"	3'- 11 3/4"	3'- 6 5/8"	2	4	5'- 5"	2'- 7"	0'- 2 1/8"	6'- 5"	3'- 7"	0'- 2 1/8"	4	16'- 9"
L	4	17'- 6"	4	11'- 9"	4'- 2 3/4"	3'- 9 1/8"	2	4	5'- 5"	2'- 7"	0'- 2"	6'- 5"	3'- 7"	0'- 2"	4	17'- 9"
M	4	18'- 6"	4	13'- 4"	3'- 9 1/2"	4'- 9 1/4"	2	4	4'- 11"	2'- 5 3/4"	0'- 2 1/4"	5'- 11"	3'- 5 3/4"	0'- 2 1/4"	4	18'- 10"
N	4	18'- 6"	4	13'- 4"	3'- 9 1/2"	4'- 9 1/4"	2	4	4'- 11"	2'- 5 3/4"	0'- 2 1/4"	5'- 11"	3'- 5 3/4"	0'- 2 1/4"	4	18'- 10"
O	4	19'- 6"	4	14'- 9"	3'- 5 5/8"	3'- 9 1/8"	2	4	5'- 4"	2'- 6 3/4"	0'- 2 3/8"	6'- 4"	3'- 6 3/4"	0'- 2 3/8"	4	19'- 11"
P	4	20'- 6"	4	16'- 1"	3'- 2 1/2"	4'- 3 1/2"	2	4	4'- 6"	2'- 6 3/8"	0'- 2 5/8"	5'- 6"	3'- 6 3/8"	0'- 2 5/8"	4	21'- 0"
Q	4	21'- 6"	4	16'- 10"	3'- 4 3/4"	4'- 5 3/4"	2	4	4'- 7"	2'- 6"	0'- 2 1/2"	5'- 7"	3'- 6"	0'- 2 1/2"	4	21'- 11"
R	4	22'- 6"	4	18'- 1"	3'- 2"	3'- 8 3/4"	2	4	4'- 11"	2'- 6 1/8"	0'- 2 5/8"	5'- 11"	3'- 6 1/8"	0'- 2 5/8"	4	23'- 0"
S	4	23'- 6"	4	19'- 4"	3'- 0"	4'- 1"	2	4	5'- 4"	2'- 7"	0'- 2 3/4"	6'- 4"	3'- 7"	0'- 2 3/4"	4	24'- 1"
T	4	24'- 6"	4	20'- 2"	3'- 1 1/2"	4'- 3 1/8"	2	4	4'- 6"	2'- 6 3/8"	0'- 2 5/8"	5'- 6"	3'- 6 3/8"	0'- 2 5/8"	4	25'- 1"
U	4	25'- 6"	4	21'- 5"	2'- 11 3/4"	3'- 8 1/4"	2	4	5'- 1"	2'- 6 3/4"	0'- 2 3/4"	6'- 1"	3'- 6 3/4"	0'- 2 3/4"	4	26'- 2"
V	4	26'- 6"	4	22'- 7"	2'- 10 1/8"	3'- 11 3/8"	2	4	5'- 2"	2'- 6 3/8"	0'- 2 7/8"	6'- 2"	3'- 6 3/8"	0'- 2 7/8"	4	27'- 3"
W	4	27'- 6"	4	23'- 9"	2'- 8 1/4"	3'- 6 1/8"	2	4	5'- 4"	2'- 7"	0'- 3"	6'- 4"	3'- 7"	0'- 3"	4	28'- 4"
X	4	28'- 6"	4	25'- 1"	2'- 4 7/8"	3'- 2 7/8"	2	4	5'- 1"	2'- 6 5/8"	0'- 3 3/8"	6'- 1"	3'- 6 5/8"	0'- 3 3/8"	4	29'- 7"
Y	4	29'- 6"	4	26'- 5"	2'- 2"	3'- 3 1/8"	2	4	5'- 3"	2'- 6 3/8"	0'- 3 5/8"	6'- 3"	3'- 6 3/8"	0'- 3 5/8"	4	30'- 10"
Z	4	30'- 6"	4	27'- 5"	2'- 2"	3'- 1 7/8"	2	4	5'- 4"	2'- 6 1/4"	0'- 3 3/4"	6'- 4"	3'- 6 1/4"	0'- 3 3/4"	4	31'- 11"
AA	4	31'- 6"	4	28'- 6"	2'- 1 7/8"	2'- 11 1/8"	2	4	5'- 8"	2'- 6 1/2"	0'- 3 3/4"	6'- 8"	3'- 6 1/2"	0'- 3 3/4"	4	33'- 0"
BB	4	32'- 6"	4	29'- 9"	1'- 11 1/4"	2'- 9 3/8"	2	4	6'- 3"	2'- 7"	0'- 4"	7'- 3"	3'- 7"	0'- 4"	4	34'- 3"
CC	4	33'- 6"	4	30'- 9"	1'- 10 3/4"	2'- 10 3/8"	2	4	6'- 8"	2'- 6 1/2"	0'- 4 1/8"	7'- 8"	3'- 6 1/2"	0'- 4 1/8"	4	35'- 4"
DD	4	34'- 6"	4	31'- 10"	1'- 11 1/8"	2'- 8 5/8"	2	4	6'- 0"	2'- 6 3/4"	0'- 4 1/8"	7'- 0"	3'- 6 3/4"	0'- 4 1/8"	4	36'- 6"
EE	4	35'- 6"	4	32'- 10"	1'- 10 3/4"	2'- 9 3/4"	2	4	6'- 5"	2'- 6 1/4"	0'- 4 1/4"	7'- 5"	3'- 6 1/4"	0'- 4 1/4"	4	37'- 7"

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WING	SIZE	WF5						WF6						WF7						WH1		WH3	
		a			LENGTH			LENGTH			a			LENGTH			SIZE	LENGTH	SIZE	LENGTH			
		From	To	Vary By	From	To	Vary By	From	To	Vary By	From	To	Vary By	From	To	Vary By							
A	--	----	----	----	----	----	4	3'- 6"	2'- 6 ³ / ₄ "	0'- 2 ¹ / ₄ "	--	----	----	----	----	----	4	6'- 6"	4	6'- 11"			
B	--	----	----	----	----	----	4	3'- 6"	2'- 6"	0'- 2"	--	----	----	----	----	----	4	7'- 6"	4	8'- 1"			
C	--	----	----	----	----	----	4	3'- 6"	2'- 7 ¹ / ₂ "	0'- 1 ³ / ₄ "	--	----	----	----	----	----	4	8'- 6"	4	9'- 1"			
D	--	----	----	----	----	----	4	3'- 6"	2'- 7 ¹ / ₂ "	0'- 1 ¹ / ₂ "	--	----	----	----	----	----	4	9'- 6"	4	10'- 2"			
E	--	----	----	----	----	----	4	3'- 6"	2'- 7"	0'- 1 ³ / ₈ "	--	----	----	----	----	----	4	10'- 6"	4	11'- 2"			
F	--	----	----	----	----	----	4	3'- 6"	2'- 6 ³ / ₄ "	0'- 1 ¹ / ₄ "	--	----	----	----	----	----	4	11'- 6"	4	12'- 4"			
G	--	----	----	----	----	----	4	4'- 0"	2'- 6 ¹ / ₂ "	0'- 1 ³ / ₄ "	--	----	----	----	----	----	4	12'- 6"	4	13'- 4"			
H	--	----	----	----	----	----	4	4'- 6"	2'- 7 ¹ / ₂ "	0'- 2 ¹ / ₄ "	--	----	----	----	----	----	4	13'- 6"	4	14'- 5"			
I	--	----	----	----	----	----	4	4'- 6"	2'- 8"	0'- 2"	--	----	----	----	----	----	4	14'- 6"	4	15'- 6"			
J	--	----	----	----	----	----	4	4'- 11"	2'- 8"	0'- 2 ¹ / ₄ "	--	----	----	----	----	----	4	15'- 6"	4	16'- 7"			
K	--	----	----	----	----	----	4	5'- 5"	2'- 6 ¹ / ₈ "	0'- 2 ⁵ / ₈ "	--	----	----	----	----	----	4	16'- 6"	4	17'- 7"			
L	--	----	----	----	----	----	4	5'- 5"	2'- 6"	0'- 2 ¹ / ₂ "	--	----	----	----	----	----	4	17'- 6"	4	18'- 9"			
M	4	5'- 11"	5'- 1 ¹ / ₄ "	0'- 1 ⁵ / ₈ "	6'- 11"	6'- 1 ¹ / ₄ "	0'- 1 ⁵ / ₈ "	4	5'- 11"	2'- 8 ¹ / ₂ "	0'- 2 ³ / ₄ "	--	----	----	----	----	4	18'- 6"	4	19'- 9"			
N	4	5'- 11"	5'- 1 ¹ / ₄ "	0'- 1 ⁵ / ₈ "	6'- 11"	6'- 1 ¹ / ₄ "	0'- 1 ⁵ / ₈ "	4	5'- 11"	2'- 8 ¹ / ₂ "	0'- 2 ³ / ₄ "	--	----	----	----	----	4	18'- 6"	4	19'- 9"			
O	4	6'- 5"	5'- 6 ¹ / ₂ "	0'- 1 ³ / ₄ "	7'- 5"	6'- 6 ¹ / ₂ "	0'- 1 ³ / ₄ "	4	6'- 5"	2'- 8"	0'- 3"	--	----	----	----	----	4	19'- 6"	4	20'- 10"			
P	4	5'- 6"	4'- 8"	0'- 2"	6'- 6"	5'- 8"	0'- 2"	4	6'- 11"	2'- 7"	0'- 3 ¹ / ₄ "	4	6'- 11"	5'- 8"	0'- 1 ¹ / ₄ "	7'- 11"	6'- 8"	0'- 1 ¹ / ₄ "	4	20'- 6"	4	21'- 11"	
Q	4	5'- 7"	4'- 9 ⁵ / ₈ "	0'- 1 ⁷ / ₈ "	6'- 7"	5'- 9 ⁵ / ₈ "	0'- 1 ⁷ / ₈ "	4	6'- 11"	2'- 8"	0'- 3"	4	6'- 11"	5'- 8"	0'- 1 ¹ / ₄ "	7'- 11"	6'- 8"	0'- 1 ¹ / ₄ "	4	21'- 6"	4	23'- 0"	
R	4	6'- 0"	5'- 2"	0'- 2"	7'- 0"	6'- 2"	0'- 2"	4	7'- 5"	2'- 6 ¹ / ₂ "	0'- 3 ¹ / ₄ "	4	7'- 5"	6'- 2"	0'- 1 ¹ / ₄ "	8'- 5"	7'- 2"	0'- 1 ¹ / ₄ "	4	22'- 6"	4	24'- 0"	
S	4	6'- 5"	5'- 6 ³ / ₈ "	0'- 2 ¹ / ₈ "	7'- 5"	6'- 6 ³ / ₈ "	0'- 2 ¹ / ₈ "	4	7'- 11"	2'- 10 ¹ / ₄ "	0'- 3 ³ / ₈ "	4	7'- 11"	6'- 6 ¹ / ₂ "	0'- 1 ³ / ₈ "	8'- 11"	7'- 6 ¹ / ₂ "	0'- 1 ³ / ₈ "	4	23'- 6"	4	25'- 2"	
T	4	5'- 11"	4'- 9"	0'- 2"	6'- 11"	5'- 9"	0'- 2"	4	7'- 11"	2'- 9 ¹ / ₄ "	0'- 3 ¹ / ₄ "	4	7'- 11"	6'- 1 ³ / ₄ "	0'- 1 ¹ / ₄ "	8'- 11"	7'- 1 ³ / ₄ "	0'- 1 ¹ / ₄ "	4	24'- 6"	4	26'- 2"	
U	5	7'- 2 ¹ / ₄ "	5'- 4 ¹ / ₄ "	0'- 2"	8'- 4"	6'- 6"	0'- 2"	4	8'- 5"	2'- 7"	0'- 3 ¹ / ₂ "	5	8'- 5 ¹ / ₄ "	7'- 4 ⁷ / ₈ "	0'- 1 ³ / ₈ "	9'- 7"	8'- 6 ⁵ / ₈ "	0'- 1 ³ / ₈ "	4	25'- 6"	4	27'- 3"	
V	5	7'- 5 ¹ / ₄ "	5'- 5 ⁷ / ₈ "	0'- 2 ¹ / ₈ "	8'- 7"	6'- 7 ⁵ / ₈ "	0'- 2 ¹ / ₈ "	4	8'- 11"	2'- 6 ¹ / ₈ "	0'- 3 ⁵ / ₈ "	5	8'- 11 ¹ / ₄ "	7'- 6 ³ / ₄ "	0'- 1 ¹ / ₂ "	10'- 1"	8'- 8 ¹ / ₂ "	0'- 1 ¹ / ₂ "	4	26'- 6"	4	28'- 3"	
W	5	7'- 7 ¹ / ₄ "	5'- 6 ¹ / ₂ "	0'- 2 ¹ / ₄ "	8'- 9"	6'- 8 ¹ / ₄ "	0'- 2 ¹ / ₄ "	4	9'- 5"	2'- 6 ¹ / ₂ "	0'- 3 ³ / ₄ "	5	9'- 5 ¹ / ₄ "	7'- 9 ³ / ₄ "	0'- 1 ¹ / ₂ "	10'- 7"	8'- 11 ¹ / ₂ "	0'- 1 ¹ / ₂ "	4	27'- 6"	4	29'- 5"	
X	5	8'- 5 ¹ / ₄ "	5'- 3 ³ / ₄ "	0'- 2 ¹ / ₂ "	9'- 7"	6'- 5 ¹ / ₂ "	0'- 2 ¹ / ₂ "	4	10'- 5"	2'- 10 ¹ / ₄ "	0'- 4 ¹ / ₈ "	5	10'- 5 ¹ / ₄ "	8'- 8 ¹ / ₈ "	0'- 1 ⁵ / ₈ "	11'- 7"	9'- 9 ⁷ / ₈ "	0'- 1 ⁵ / ₈ "	4	28'- 6"	4	30'- 5"	
Y	5	8'- 11 ¹ / ₄ "	5'- 6"	0'- 2 ³ / ₄ "	10'- 1"	6'- 7 ³ / ₄ "	0'- 2 ³ / ₄ "	4	11'- 5"	2'- 9 ¹ / ₂ "	0'- 4 ¹ / ₂ "	5	11'- 5 ¹ / ₄ "	9'- 1 ¹ / ₈ "	0'- 1 ⁷ / ₈ "	12'- 7"	10'- 2 ⁷ / ₈ "	0'- 1 ⁷ / ₈ "	4	29'- 6"	4	31'- 6"	
Z	5	9'- 1 ¹ / ₄ "	5'- 8"	0'- 2 ³ / ₄ "	10'- 3"	6'- 9 ³ / ₄ "	0'- 2 ³ / ₄ "	4	11'- 11"	2'- 8"	0'- 4 ⁵ / ₈ "	5	11'- 11 ¹ / ₄ "	9'- 3 ³ / ₈ "	0'- 1 ⁷ / ₈ "	13'- 1"	10'- 5 ⁵ / ₈ "	0'- 1 ⁷ / ₈ "	4	30'- 6"	4	32'- 7"	
AA	6	9'- 6 ¹ / ₂ "	5'- 11 ³ / ₈ "	0'- 2 ¹ / ₈ "	10'- 11"	7'- 3 ³ / ₈ "	0'- 2 ¹ / ₈ "	4	12'- 5"	2'- 6 ¹ / ₄ "	0'- 4 ³ / ₄ "	6	12'- 4 ¹ / ₂ "	9'- 8 ⁵ / ₈ "	0'- 1 ⁷ / ₈ "	13'- 9"	11'- 1 ¹ / ₈ "	0'- 1 ⁷ / ₈ "	4	31'- 6"	4	33'- 8"	
BB	6	10'- 3 ¹ / ₂ "	6'- 6 ¹ / ₂ "	0'- 3"	11'- 8"	7'- 11"	0'- 3"	4	13'- 5"	2'- 7"	0'- 5"	6	13'- 4 ¹ / ₂ "	10'- 6 ¹ / ₂ "	0'- 2"	14'- 9"	11'- 11"	0'- 2"	4	32'- 6"	4	34'- 8"	
CC	6	10'- 9 ¹ / ₂ "	7'- 1 ¹ / ₂ "	0'- 3"	12'- 2"	8'- 5"	0'- 3"	4	13'- 11"	2'- 9 ³ / ₄ "	0'- 5 ¹ / ₈ "	6	13'- 10 ¹ / ₂ "	11'- 1 ¹ / ₂ "	0'- 2"	15'- 3"	12'- 5"	0'- 2"	4	33'- 6"	4	35'- 10"	
DD	6	11'- 2 ¹ / ₂ "	6'- 3 ¹ / ₈ "	0'- 3 ¹ / ₈ "	12'- 7"	7'- 7 ⁵ / ₈ "	0'- 3 ¹ / ₈ "	4	14'- 5"	2'- 10 ⁵ / ₈ "	0'- 5 ¹ / ₈ "	6	14'- 4 ¹ / ₂ "	11'- 6 ¹ / ₂ "	0'- 2"	15'- 9"	12'- 11"	0'- 2"	4	34'- 6"	4	36'- 10"	
EE	6	11'- 8 ¹ / ₂ "	6'- 9 ¹ / ₈ "	0'- 3 ¹ / ₈ "	13'- 1"	8'- 1 ⁵ / ₈ "	0'- 3 ¹ / ₈ "	4	14'- 11"	2'- 8"	0'- 5 ¹ / ₄ "	6	14'- 10 ¹ / ₂ "	11'- 10 ³ / ₈ "	0'- 2 ¹ / ₈ "	16'- 3"	13'- 2 ³ / ₈ "	0'- 2 ¹ / ₈ "	4	35'- 6"	4	37'- 11"	

Sheet 5 of 7

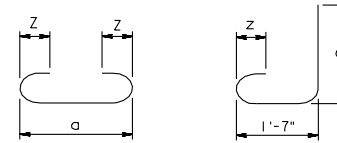
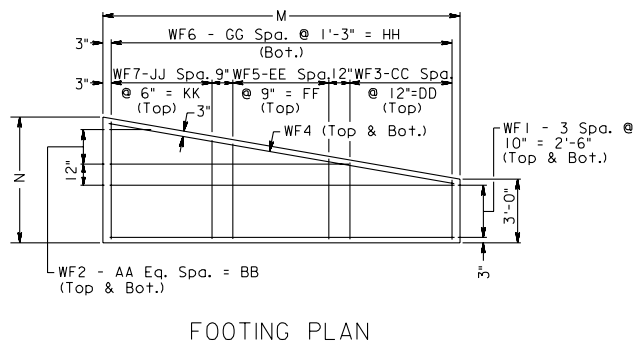
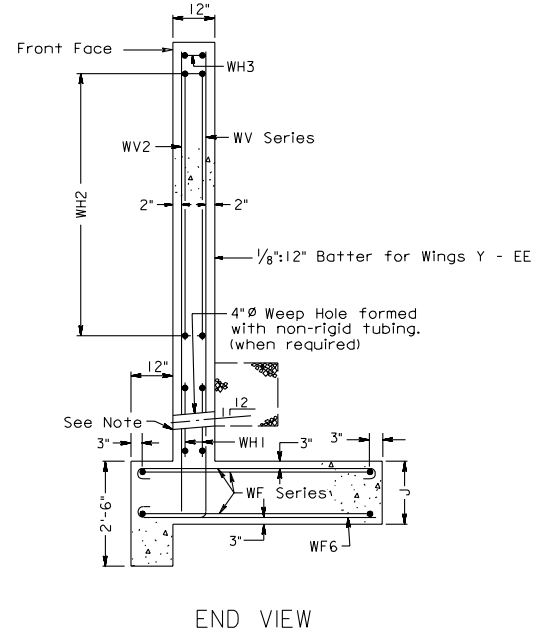
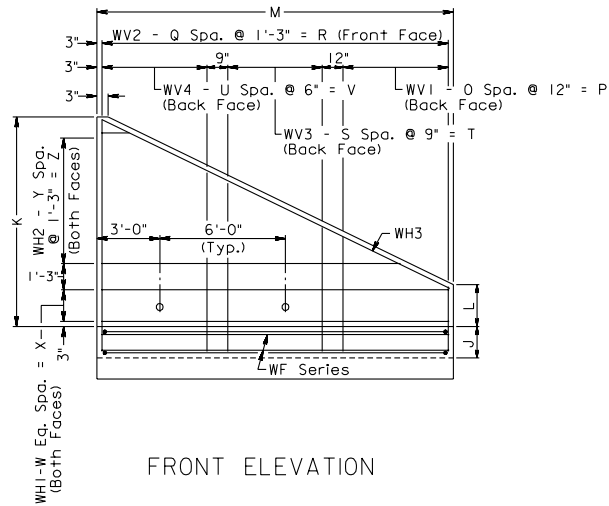
1006.19

WING DETAILS
 2:1 FILL SLOPE - TYPE I
 VIRGINIA DEPARTMENT OF TRANSPORTATION

STRUCTURE
 AND
 BRIDGE
 DIVISION

WING	WH2					WV1					WV2					
	SIZE	LENGTH			# Ea	SIZE	a			LENGTH			SIZE	LENGTH		
		From	To	Vary By			From	To	Vary By	From	To	Vary By		From	To	Vary By
A	4	6'- 0"	2'- 7 ⁷ / ₈ "	3'- 4 ¹ / ₈ "	2	4	5'- 1 ⁴ / ₄ "	2'- 9 ¹ / ₄ "	0'- 4 ¹ / ₂ "	7'- 0"	4'- 9"	0'- 4 ¹ / ₂ "	4	5'- 0"	2'- 7 ⁷ / ₈ "	0'- 5 ⁵ / ₈ "
B	4	5'- 9"	2'- 6 ¹ / ₂ "	3'- 2 ¹ / ₂ "	2	4	5'- 6 ¹ / ₄ "	2'- 9"	0'- 4 ³ / ₄ "	7'- 6"	4'- 8 ³ / ₄ "	0'- 4 ³ / ₄ "	4	5'- 6"	2'- 6 ³ / ₄ "	0'- 5 ⁵ / ₈ "
C	4	6'- 0"	2'- 7 ³ / ₄ "	3'- 4 ¹ / ₄ "	2	4	6'- 1 ⁴ / ₄ "	3'- 1 ⁴ / ₄ "	0'- 4 ¹ / ₂ "	8'- 0"	5'- 0"	0'- 4 ¹ / ₂ "	4	6'- 0"	3'- 2 ¹ / ₄ "	0'- 5 ⁵ / ₈ "
D	4	9'- 1"	2'- 6 ¹ / ₂ "	3'- 3 ¹ / ₄ "	2	4	6'- 6 ¹ / ₄ "	3'- 5 ⁵ / ₈ "	0'- 4 ⁵ / ₈ "	8'- 6"	5'- 5 ⁵ / ₈ "	0'- 4 ⁵ / ₈ "	4	6'- 6"	3'- 1 ³ / ₄ "	0'- 5 ⁵ / ₈ "
E	4	9'- 4"	2'- 7 ³ / ₄ "	3'- 4 ¹ / ₈ "	2	4	7'- 1 ⁴ / ₄ "	3'- 3 ¹ / ₄ "	0'- 4 ¹ / ₂ "	9'- 0"	5'- 3"	0'- 4 ¹ / ₂ "	4	7'- 0"	3'- 3"	0'- 5 ⁵ / ₈ "
F	4	9'- 1"	2'- 6 ³ / ₄ "	3'- 3 ¹ / ₈ "	2	4	7'- 6 ¹ / ₄ "	3'- 3 ³ / ₈ "	0'- 4 ⁵ / ₈ "	9'- 6"	5'- 3 ¹ / ₈ "	0'- 4 ⁵ / ₈ "	4	7'- 6"	3'- 2 ¹ / ₄ "	0'- 5 ⁵ / ₈ "
G	4	9'- 4"	2'- 7 ¹ / ₂ "	3'- 4 ¹ / ₄ "	2	4	8'- 1 ⁴ / ₄ "	3'- 6 ¹ / ₄ "	0'- 4 ¹ / ₂ "	10'- 0"	5'- 6"	0'- 4 ¹ / ₂ "	4	8'- 0"	3'- 3 ³ / ₄ "	0'- 5 ⁵ / ₈ "
H	4	12'- 5"	2'- 6 ¹ / ₈ "	3'- 3 ³ / ₈ "	2	4	8'- 6 ¹ / ₄ "	3'- 6 ¹ / ₈ "	0'- 4 ⁵ / ₈ "	10'- 6"	5'- 5 ¹ / ₈ "	0'- 4 ⁵ / ₈ "	4	8'- 6"	3'- 8 ¹ / ₂ "	0'- 5 ⁵ / ₈ "
I	4	12'- 8"	2'- 7 ⁵ / ₈ "	3'- 4 ¹ / ₈ "	2	4	9'- 1 ⁴ / ₄ "	3'- 9 ¹ / ₄ "	0'- 4 ¹ / ₂ "	11'- 0"	5'- 9"	0'- 4 ¹ / ₂ "	4	9'- 0"	3'-10 ¹ / ₈ "	0'- 5 ⁵ / ₈ "
J	4	12'- 5"	2'- 6 ¹ / ₈ "	3'- 3 ³ / ₈ "	2	4	9'- 6 ¹ / ₄ "	3'- 8 ¹ / ₈ "	0'- 4 ⁵ / ₈ "	11'- 6"	5'- 8 ⁵ / ₈ "	0'- 4 ⁵ / ₈ "	4	9'- 6"	3'- 9"	0'- 5 ⁵ / ₈ "
K	4	16'- 0"	2'- 7 ¹ / ₂ "	3'- 4 ¹ / ₈ "	2	4	10'- 1 ⁴ / ₄ "	4'- 1 ⁴ / ₄ "	0'- 4 ¹ / ₂ "	12'- 0"	6'- 0"	0'- 4 ¹ / ₂ "	4	10'- 0"	3'-10 ¹ / ₈ "	0'- 5 ⁵ / ₈ "
L	4	15'- 9"	2'- 7"	3'- 3 ¹ / ₂ "	2	4	8'- 4 ¹ / ₄ "	3'-10 ¹ / ₄ "	0'- 4 ¹ / ₂ "	10'- 4"	5'-10"	0'- 4 ¹ / ₂ "	4	10'- 6"	3'- 9 ¹ / ₂ "	0'- 5 ⁵ / ₈ "
M	4	16'- 0"	2'- 7 ¹ / ₂ "	3'- 4 ¹ / ₈ "	2	4	8'-11 ¹ / ₄ "	4'- 3 ¹ / ₄ "	0'- 4 ¹ / ₂ "	10'-11"	6'- 1 ¹ / ₂ "	0'- 4 ¹ / ₂ "	4	11'- 0"	4'- 5 ¹ / ₄ "	0'- 5 ⁵ / ₈ "
N	4	16'- 0"	2'- 7 ¹ / ₂ "	3'- 4 ¹ / ₈ "	2	4	8'- 5 ¹ / ₄ "	4'- 8 ¹ / ₄ "	0'- 4 ¹ / ₂ "	10'- 5"	6'- 8"	0'- 4 ¹ / ₂ "	4	11'- 6"	4'-11 ¹ / ₄ "	0'- 5 ⁵ / ₈ "
O	4	19'- 1"	2'- 6 ¹ / ₈ "	3'- 3 ³ / ₈ "	2	4	8'-10 ¹ / ₄ "	4'- 8 ³ / ₄ "	0'- 4 ¹ / ₂ "	10'-10"	6'- 8 ¹ / ₂ "	0'- 4 ¹ / ₂ "	4	12'- 0"	4'- 9 ³ / ₄ "	0'- 5 ⁵ / ₈ "
P	4	19'- 4"	2'- 7 ³ / ₈ "	3'- 4 ¹ / ₈ "	2	4	7'-10 ¹ / ₄ "	4'-10 ¹ / ₄ "	0'- 4 ¹ / ₂ "	9'-10"	6'-10"	0'- 4 ¹ / ₂ "	4	12'- 6"	5'- 0"	0'- 5 ⁵ / ₈ "
Q	4	19'- 1"	2'- 6 ¹ / ₈ "	3'- 3 ⁵ / ₈ "	2	4	8'- 3 ¹ / ₄ "	4'- 9 ⁵ / ₈ "	0'- 4 ⁵ / ₈ "	10'- 3"	6'- 9 ³ / ₈ "	0'- 4 ⁵ / ₈ "	4	13'- 0"	4'-10 ¹ / ₄ "	0'- 5 ⁵ / ₈ "
R	4	19'- 4"	2'- 7 ³ / ₈ "	3'- 4 ¹ / ₈ "	2	4	8'-10 ¹ / ₄ "	5'- 1 ¹ / ₄ "	0'- 4 ¹ / ₂ "	10'-10"	7'- 1"	0'- 4 ¹ / ₂ "	4	13'- 6"	5'- 3 ¹ / ₄ "	0'- 5 ⁵ / ₈ "
S	4	22'- 5"	2'- 7 ¹ / ₄ "	3'- 3 ⁵ / ₈ "	2	4	9'- 3 ¹ / ₄ "	5'- 3 ⁵ / ₈ "	0'- 4 ⁵ / ₈ "	11'- 3"	7'- 1 ¹ / ₈ "	0'- 4 ⁵ / ₈ "	4	14'- 0"	5'- 4 ¹ / ₂ "	0'- 5 ⁵ / ₈ "
T	4	22'- 8"	2'- 7 ¹ / ₄ "	3'- 4 ¹ / ₈ "	2	4	9'- 9 ¹ / ₄ "	5'- 3 ¹ / ₄ "	0'- 4 ¹ / ₂ "	11'- 9"	7'- 3"	0'- 4 ¹ / ₂ "	4	14'- 6"	5'- 7 ¹ / ₈ "	0'- 5 ⁵ / ₈ "
U	4	22'- 5"	2'- 7 ¹ / ₄ "	3'- 3 ⁵ / ₈ "	2	4	9'-10 ¹ / ₄ "	5'- 4 ¹ / ₄ "	0'- 4 ¹ / ₂ "	11'-10"	7'- 4"	0'- 4 ¹ / ₂ "	4	15'- 0"	5'- 5"	0'- 5 ⁵ / ₈ "
V	4	26'- 0"	2'- 7 ¹ / ₈ "	3'- 4 ¹ / ₈ "	2	4	9'- 4 ¹ / ₄ "	5'- 7 ¹ / ₄ "	0'- 4 ¹ / ₂ "	11'- 4"	7'- 7"	0'- 4 ¹ / ₂ "	4	15'- 6"	5'- 7 ¹ / ₈ "	0'- 5 ⁵ / ₈ "
W	4	25'- 9"	2'- 6 ³ / ₄ "	3'- 3 ³ / ₄ "	2	4	9'- 9 ¹ / ₄ "	5'- 6 ³ / ₈ "	0'- 4 ⁵ / ₈ "	11'- 9"	7'- 6 ¹ / ₈ "	0'- 4 ⁵ / ₈ "	4	16'- 0"	5'- 5 ¹ / ₂ "	0'- 5 ⁵ / ₈ "
X	4	26'- 0"	2'- 7 ¹ / ₈ "	3'- 4 ¹ / ₈ "	2	4	10'- 2 ¹ / ₄ "	6'- 3 ¹ / ₄ "	0'- 4 ¹ / ₂ "	12'- 2"	8'- 1 ¹ / ₂ "	0'- 4 ¹ / ₂ "	4	16'- 9"	6'- 5 ¹ / ₄ "	0'- 5 ⁵ / ₈ "
Y	4	29'- 1"	2'- 7"	3'- 3 ³ / ₄ "	2	4	10'- 1 ¹ / ₄ "	6'- 4 ¹ / ₄ "	0'- 4 ¹ / ₂ "	12'- 1"	8'- 4"	0'- 4 ¹ / ₂ "	4	17'- 6"	6'- 8 ⁵ / ₈ "	0'- 5 ⁵ / ₈ "
Z	4	29'- 4"	2'- 7"	3'- 4 ¹ / ₈ "	2	4	10'- 4 ¹ / ₄ "	6'- 7 ¹ / ₄ "	0'- 4 ¹ / ₂ "	12'- 4"	8'- 7"	0'- 4 ¹ / ₂ "	4	18'- 0"	6'- 9"	0'- 5 ⁵ / ₈ "
AA	4	29'- 1"	2'- 7"	3'- 3 ³ / ₄ "	2	5	10'- 8 ³ / ₄ "	6'- 7 ¹ / ₄ "	0'- 4 ¹ / ₂ "	12'- 9"	8'- 7 ¹ / ₂ "	0'- 4 ¹ / ₂ "	4	18'- 6"	6'- 9 ³ / ₈ "	0'- 5 ⁵ / ₈ "
BB	4	29'- 4"	2'- 7"	3'- 4 ¹ / ₈ "	2	5	11'- 3 ³ / ₄ "	6'- 9 ³ / ₄ "	0'- 4 ¹ / ₂ "	13'- 4"	8'-10"	0'- 4 ¹ / ₂ "	4	19'- 0"	6'- 9 ³ / ₄ "	0'- 5 ⁵ / ₈ "
CC	4	32'- 5"	2'- 7 ¹ / ₄ "	3'- 3 ³ / ₄ "	2	5	11'- 8 ³ / ₄ "	6'-10 ¹ / ₄ "	0'- 4 ¹ / ₂ "	13'- 9"	8'-10 ¹ / ₂ "	0'- 4 ¹ / ₂ "	4	19'- 6"	7'- 3 ³ / ₄ "	0'- 5 ⁵ / ₈ "
DD	4	32'- 8"	2'- 8"	3'- 4"	2	5	12'- 3 ¹ / ₄ "	7'- 6 ³ / ₄ "	0'- 4 ¹ / ₂ "	14'- 1"	9'- 7"	0'- 4 ¹ / ₂ "	4	20'- 6"	7'-10 ¹ / ₈ "	0'- 5 ⁵ / ₈ "
EE	4	32'- 5"	2'- 7 ¹ / ₄ "	3'- 3 ³ / ₄ "	2	5	12'- 1 ³ / ₄ "	7'- 6 ¹ / ₄ "	0'- 4 ⁵ / ₈ "	14'- 2"	9'- 6 ¹ / ₂ "	0'- 4 ⁵ / ₈ "	4	21'- 0"	7'-10 ¹ / ₂ "	0'- 5 ⁵ / ₈ "

WING	SIZE	WV3						SIZE	WV4					
		a			LENGTH				a			LENGTH		
		From	To	Vary By	From	To	Vary By		From	To	Vary By	From	To	Vary By
A	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
B	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
C	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
D	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
E	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
F	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
G	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
H	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
I	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
J	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
K	--	-----	-----	-----	-----	-----	-----	--	-----	-----	-----	-----	-----	-----
L	4	10'- 6/4"	8'- 9/4"	0'- 3/2"	12'- 6"	10'- 9"	0'- 3/2"	--	-----	-----	-----	-----	-----	-----
M	4	11'- 1/4"	9'- 3/4"	0'- 3/2"	13'- 0"	11'- 3"	0'- 3/2"	--	-----	-----	-----	-----	-----	-----
N	4	10'- 5/4"	8'- 9"	0'- 3/8"	12'- 5"	10'- 8 3/4"	0'- 3/8"	4	11'- 6/4"	10'- 8 3/4"	0'- 2 3/8"	13'- 6"	12'- 8 1/2"	0'- 2 3/8"
O	4	10'- 11 1/4"	9'- 3"	0'- 3/8"	12'- 11"	11'- 2 3/4"	0'- 3/8"	4	12'- 1/4"	11'- 2 3/4"	0'- 2 3/8"	14'- 0"	13'- 2 1/2"	0'- 2 3/8"
P	4	10'- 8/4"	8'- 1 7/8"	0'- 3/8"	12'- 8"	10'- 1 5/8"	0'- 3/8"	4	12'- 6/4"	11'- 1/4"	0'- 2 1/4"	14'- 6"	13'- 0"	0'- 2 1/4"
Q	4	11'- 2 1/4"	8'- 7 7/8"	0'- 3/8"	13'- 2"	10'- 7 5/8"	0'- 3/8"	4	13'- 1/4"	11'- 5 1/4"	0'- 2 3/8"	15'- 0"	13'- 5"	0'- 2 3/8"
R	5	11'- 8 3/4"	9'- 2 3/8"	0'- 3/8"	13'- 9"	11'- 2 3/8"	0'- 3/8"	5	13'- 5 3/4"	11'- 11 3/4"	0'- 2 1/4"	15'- 6"	14'- 0"	0'- 2 1/4"
S	5	12'- 1 3/4"	9'- 7 3/8"	0'- 3/8"	14'- 2"	11'- 7 5/8"	0'- 3/8"	5	13'- 11 3/4"	12'- 5 3/4"	0'- 2 1/4"	16'- 0"	14'- 6"	0'- 2 1/4"
T	5	12'- 8 3/4"	10'- 2 3/8"	0'- 3/8"	14'- 9"	12'- 2 5/8"	0'- 3/8"	5	14'- 5 3/4"	12'- 11 3/4"	0'- 2 1/4"	16'- 6"	15'- 0"	0'- 2 1/4"
U	5	12'- 9 3/4"	10'- 3 3/8"	0'- 3/8"	14'- 10"	12'- 3 3/8"	0'- 3/8"	5	14'- 11 3/4"	13'- 1 1/4"	0'- 2 1/4"	17'- 0"	15'- 1 1/2"	0'- 2 1/4"
V	6	13'- 3 5/8"	9'- 7 3/4"	0'- 3/8"	15'- 5"	11'- 9 1/8"	0'- 3/8"	6	15'- 5 5/8"	13'- 7 1/8"	0'- 2 1/4"	17'- 7"	15'- 8 1/2"	0'- 2 1/4"
W	6	13'- 9 5/8"	10'- 1 3/4"	0'- 3/8"	15'- 11"	12'- 3 3/8"	0'- 3/8"	6	15'- 11 5/8"	14'- 1 1/8"	0'- 2 1/4"	18'- 1"	16'- 2 1/2"	0'- 2 1/4"
X	6	14'- 2 5/8"	10'- 6 3/4"	0'- 3/8"	16'- 4"	12'- 8 1/8"	0'- 3/8"	6	16'- 8 5/8"	14'- 5 5/8"	0'- 2 1/4"	18'- 10"	16'- 7"	0'- 2 1/4"
Y	6	15'- 3 5/8"	10'- 6 1/4"	0'- 3/8"	17'- 5"	12'- 7 5/8"	0'- 3/8"	6	17'- 5 5/8"	15'- 7 1/8"	0'- 2 1/4"	19'- 7"	17'- 8 1/2"	0'- 2 1/4"
Z	6	15'- 5 5/8"	10'- 8 1/4"	0'- 3/8"	17'- 7"	12'- 9 5/8"	0'- 3/8"	6	17'- 11 5/8"	15'- 8 5/8"	0'- 2 1/4"	20'- 1"	17'- 10"	0'- 2 1/4"
AA	7	15'- 11 5/8"	11'- 2 1/4"	0'- 3/8"	18'- 2"	13'- 4 5/8"	0'- 3/8"	7	18'- 5 5/8"	16'- 2 5/8"	0'- 2 1/4"	20'- 8"	18'- 5"	0'- 2 1/4"
BB	7	16'- 5 5/8"	11'- 8 1/4"	0'- 3/8"	18'- 8"	13'- 10 5/8"	0'- 3/8"	7	18'- 11 5/8"	16'- 8 5/8"	0'- 2 1/4"	21'- 2"	18'- 11"	0'- 2 1/4"
CC	7	16'- 11 5/8"	12'- 2 1/4"	0'- 3/8"	19'- 2"	14'- 4 5/8"	0'- 3/8"	7	19'- 5 5/8"	17'- 2 5/8"	0'- 2 1/4"	21'- 8"	19'- 5"	0'- 2 1/4"
DD	7	17'- 2 5/8"	12'- 5 1/4"	0'- 3/8"	19'- 5"	14'- 7 5/8"	0'- 3/8"	7	20'- 5 5/8"	17'- 5 5/8"	0'- 2 1/4"	22'- 8"	19'- 8"	0'- 2 1/4"
EE	7	17'- 3 5/8"	12'- 6 1/4"	0'- 3/8"	19'- 6"	14'- 8 5/8"	0'- 3/8"	8	20'- 11 1/2"	17'- 7"	0'- 2 1/4"	23'- 3"	19'- 10 1/2"	0'- 2 1/4"



WF3, WF5, WF7 WV1, WV3, WV4

TABLE B		
Bar Size	Pin Dia.	Z
#3	2 1/4"	4"
#4	3"	4 1/2"
#5	3 3/4"	5"
#6	4 1/2"	6"
#7	5 1/4"	7"
#8	6"	8"
#9	9"	10 3/8"

TABLE C	
Bar Size	Splice Length
#4	1'-4"
#5	1'-8"
#6	1'-11"
#7	2'-4"
#8	3'-1"
#9	3'-11"

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 Cu. Yd.	Reinforcing Steel Lbs.
A	2.917	182.454
B	3.499	233.188
C	3.939	252.894
D	4.573	286.711
E	5.233	341.981
F	6.145	383.724
G	6.881	445.681
H	7.910	489.811
I	8.512	517.004
J	9.643	613.342
K	10.529	655.405
L	11.777	771.234
M	13.099	837.992
N	14.106	919.335
O	15.275	1017.802
P	16.355	1093.189
Q	17.891	1292.357
R	19.035	1525.633
S	20.691	1704.239
T	21.910	1952.852
U	23.368	2116.654
V	24.678	2112.153
W	28.412	2270.223
X	32.434	3904.347
Y	35.972	2730.572
Z	37.707	2849.343
AA	39.857	3392.164
BB	42.547	3594.334
CC	46.155	4755.614
DD	49.940	5500.464
EE	51.922	6808.705

WING	DIMENSIONS					BAR SPACINGS																				NO. WEEP HOLES		
	J	K	L	M	N	WV1		WV2		WV3		WV4		WH1		WH2		WF2		WF3		WF5		WF6			WF7	
						O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG	HH		JJ	KK
A	1'- 6"	4'- 0"	1'- 0"	9'- 0"	4'- 0"	8	8'- 0"	6	7'- 6"	--	----	--	----	--	----	1	1'- 3"	--	----	8	8'- 0"	--	----	6	7'- 6"	--	----	--
B	1'- 6"	4'- 6"	1'- 0"	10'- 6"	4'- 0"	10	10'- 0"	8	10'- 0"	--	----	--	----	1	0'- 6"	1	1'- 3"	--	----	10	10'- 0"	--	----	8	10'- 0"	--	----	--
C	1'- 6"	5'- 0"	1'- 0"	11'- 6"	4'- 0"	11	11'- 0"	8	10'- 0"	--	----	--	----	--	----	2	2'- 6"	--	----	11	11'- 0"	--	----	8	10'- 0"	--	----	--
D	1'- 6"	5'- 6"	1'- 0"	13'- 0"	4'- 0"	12	12'- 0"	10	12'- 6"	--	----	--	----	--	----	2	2'- 6"	--	----	12	12'- 0"	--	----	10	12'- 6"	--	----	--
E	1'- 6"	6'- 0"	1'- 0"	14'- 6"	4'- 0"	14	14'- 0"	11	13'- 9"	--	----	--	----	--	----	3	3'- 9"	--	----	14	14'- 0"	--	----	11	13'- 9"	--	----	--
F	1'- 6"	6'- 6"	1'- 0"	16'- 0"	4'- 6"	15	15'- 0"	12	15'- 0"	--	----	--	----	--	----	3	3'- 9"	--	----	15	15'- 0"	--	----	12	15'- 0"	--	----	--
G	1'- 6"	7'- 0"	1'- 0"	17'- 6"	4'- 6"	17	17'- 0"	13	16'- 3"	--	----	--	----	1	0'- 6"	3	3'- 9"	--	----	17	17'- 0"	--	----	13	16'- 3"	--	----	--
H	1'- 6"	7'- 6"	1'- 0"	19'- 0"	5'- 0"	18	18'- 0"	14	17'- 6"	--	----	--	----	--	----	4	5'- 0"	--	----	18	18'- 0"	--	----	14	17'- 6"	--	----	--
I	1'- 6"	8'- 0"	1'- 0"	20'- 0"	5'- 0"	19	19'- 0"	15	18'- 9"	--	----	--	----	--	----	4	5'- 0"	--	----	19	19'- 0"	--	----	15	18'- 9"	--	----	--
J	1'- 6"	8'- 6"	1'- 0"	21'- 6"	5'- 6"	21	21'- 0"	16	20'- 0"	--	----	--	----	--	----	5	6'- 3"	1	0'- 9"	21	21'- 0"	--	----	16	20'- 0"	--	----	--
K	1'- 6"	9'- 0"	1'- 0"	23'- 0"	5'- 6"	22	22'- 0"	18	22'- 6"	--	----	--	----	--	----	5	6'- 3"	1	0'- 9"	22	22'- 0"	--	----	18	22'- 6"	--	----	--
L	1'- 6"	9'- 6"	1'- 0"	24'- 6"	6'- 0"	17	17'- 0"	19	23'- 9"	8	6'- 0"	--	----	1	0'- 6"	5	6'- 3"	2	1'- 3"	24	24'- 0"	--	----	19	23'- 9"	--	----	--
M	1'- 6"	10'- 0"	1'- 0"	26'- 0"	6'- 6"	17	17'- 0"	20	25'- 0"	10	7'- 6"	--	----	--	----	6	7'- 6"	2	1'- 9"	20	20'- 0"	6	4'- 6"	20	25'- 0"	--	----	2
N	1'- 6"	10'- 6"	1'- 0"	27'- 6"	6'- 6"	12	12'- 0"	21	26'- 3"	13	9'- 9"	7	3'- 6"	--	----	6	7'- 6"	2	1'- 9"	22	22'- 0"	5	3'- 9"	21	26'- 3"	--	----	2
O	1'- 6"	11'- 0"	1'- 0"	28'- 6"	7'- 0"	13	13'- 0"	22	27'- 6"	13	9'- 9"	7	3'- 6"	--	----	7	8'- 9"	3	2'- 3"	23	23'- 0"	5	3'- 9"	22	27'- 6"	--	----	2
P	1'- 6"	11'- 6"	1'- 0"	30'- 0"	7'- 0"	15	15'- 0"	23	28'- 9"	13	9'- 9"	6	3'- 0"	--	----	7	8'- 9"	3	2'- 3"	17	17'- 0"	9	6'- 9"	23	28'- 9"	8	4'- 0"	3
Q	1'- 6"	12'- 0"	1'- 0"	31'- 6"	7'- 6"	15	15'- 0"	24	30'- 0"	13	9'- 9"	9	4'- 6"	1	0'- 6"	7	8'- 9"	3	2'- 9"	18	18'- 0"	9	6'- 9"	24	30'- 0"	9	4'- 6"	3
R	1'- 6"	12'- 6"	1'- 0"	33'- 0"	7'- 6"	15	15'- 0"	26	32'- 6"	13	9'- 9"	12	6'- 0"	--	----	8	10'- 0"	3	2'- 9"	19	19'- 0"	9	6'- 9"	26	32'- 6"	10	5'- 0"	3
S	1'- 6"	13'- 0"	1'- 0"	34'- 6"	8'- 0"	15	15'- 0"	27	33'- 9"	13	9'- 9"	15	7'- 6"	--	----	8	10'- 0"	4	3'- 3"	19	19'- 0"	9	6'- 9"	27	33'- 9"	13	6'- 6"	3
T	1'- 6"	13'- 6"	1'- 0"	36'- 0"	8'- 0"	14	14'- 0"	28	35'- 0"	15	11'- 3"	17	8'- 6"	--	----	9	11'- 3"	4	3'- 3"	19	19'- 0"	11	8'- 3"	28	35'- 0"	13	6'- 6"	4
U	1'- 6"	14'- 0"	1'- 0"	37'- 0"	8'- 6"	14	14'- 0"	29	36'- 3"	17	12'- 9"	16	8'- 0"	--	----	9	11'- 3"	4	3'- 9"	19	19'- 0"	13	9'- 9"	29	36'- 3"	12	6'- 0"	4
V	1'- 6"	14'- 6"	1'- 0"	38'- 6"	8'- 6"	15	15'- 0"	30	37'- 6"	17	12'- 9"	17	8'- 6"	1	0'- 6"	9	11'- 3"	4	3'- 9"	20	20'- 0"	13	9'- 9"	30	37'- 6"	13	6'- 6"	4
W	1'- 9"	15'- 0"	1'- 0"	40'- 0"	9'- 0"	15	15'- 0"	31	38'- 9"	19	14'- 3"	17	8'- 6"	--	----	10	12'- 6"	5	4'- 3"	20	20'- 0"	15	11'- 3"	31	38'- 9"	13	6'- 6"	5
X	2'- 0"	15'- 6"	1'- 0"	41'- 6"	9'- 6"	17	17'- 0"	32	40'- 0"	17	12'- 9"	19	9'- 6"	--	----	10	12'- 6"	5	4'- 9"	20	20'- 0"	17	12'- 9"	32	40'- 0"	13	6'- 6"	5
Y	2'- 0"	16'- 0"	1'- 0"	43'- 0"	10'- 0"	20	20'- 0"	34	42'- 6"	15	11'- 3"	19	9'- 6"	--	----	11	13'- 9"	6	5'- 3"	18	18'- 0"	19	14'- 3"	34	42'- 6"	17	8'- 6"	5
Z	2'- 0"	16'- 6"	1'- 0"	44'- 6"	10'- 0"	20	20'- 0"	35	43'- 9"	17	12'- 9"	19	9'- 6"	--	----	11	13'- 9"	6	5'- 3"	18	18'- 0"	21	15'- 9"	35	43'- 9"	17	8'- 6"	5
AA	2'- 0"	17'- 0"	1'- 0"	45'- 6"	10'- 6"	21	21'- 0"	36	45'- 0"	17	12'- 9"	19	9'- 6"	1	0'- 6"	11	13'- 9"	6	5'- 9"	19	19'- 0"	21	15'- 9"	36	45'- 0"	17	8'- 6"	6
BB	2'- 0"	17'- 6"	1'- 0"	47'- 0"	11'- 0"	21	21'- 0"	37	46'- 3"	19	14'- 3"	19	9'- 6"	--	----	12	15'- 0"	7	6'- 3"	19	19'- 0"	23	17'- 3"	37	46'- 3"	17	8'- 6"	6
CC	2'- 0"	18'- 0"	1'- 0"	48'- 6"	12'- 0"	19	19'- 0"	38	47'- 6"	21	15'- 9"	23	11'- 6"	--	----	12	15'- 0"	8	7'- 3"	19	19'- 0"	25	18'- 9"	38	47'- 6"	17	8'- 6"	6
DD	2'- 0"	18'- 6"	1'- 0"	50'- 0"	13'- 0"	18	18'- 0"	39	48'- 9"	23	17'- 3"	25	12'- 6"	--	----	13	16'- 3"	9	8'- 3"	17	17'- 0"	27	20'- 3"	39	48'- 9"	21	10'- 6"	7
EE	2'- 0"	19'- 0"	1'- 0"	51'- 6"	13'- 0"	18	18'- 0"	40	50'- 0"	25	18'- 9"	25	12'- 6"	--	----	13	16'- 3"	9	8'- 3"	17	17'- 0"	29	21'- 9"	40	50'- 0"	21	10'- 6"	7

WING	WF 1		WF 2					WF 3						WF 4		
	SIZE	LENGTH	SIZE	LENGTH				SIZE	a			LENGTH			SIZE	LENGTH
				From	To	Vary By	# Ea		From	To	Vary By	From	To	Vary By		
A	4	8'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 7"	0'- 1 $\frac{3}{8}$ "	4'- 6"	3'- 7"	0'- 1 $\frac{3}{8}$ "	4	8'- 7"
B	4	10'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 6 $\frac{3}{4}$ "	0'- 1 $\frac{1}{8}$ "	4'- 6"	3'- 6 $\frac{3}{4}$ "	0'- 1 $\frac{1}{8}$ "	4	10'- 1"
C	4	11'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 5 $\frac{5}{8}$ "	0'- 1 $\frac{1}{8}$ "	4'- 6"	3'- 5 $\frac{5}{8}$ "	0'- 1 $\frac{1}{8}$ "	4	11'- 0"
D	4	12'- 6"	--	-----	-----	-----	--	4	3'- 6"	2'- 6"	0'- 1"	4'- 6"	3'- 6"	0'- 1"	4	12'- 6"
E	4	14'- 0"	--	-----	-----	-----	--	4	3'- 6"	2'- 5 $\frac{3}{4}$ "	0'- 7 $\frac{1}{8}$ "	4'- 6"	3'- 5 $\frac{3}{4}$ "	0'- 7 $\frac{1}{8}$ "	4	14'- 0"
F	4	15'- 6"	4	5'- 1"	-----	-----	2	4	4'- 0"	2'- 7 $\frac{1}{8}$ "	0'- 1 $\frac{1}{8}$ "	5'- 0"	3'- 7 $\frac{1}{8}$ "	0'- 1 $\frac{1}{8}$ "	4	15'- 7"
G	4	17'- 0"	4	5'- 7"	-----	-----	2	4	4'- 0"	2'- 7"	0'- 1"	5'- 0"	3'- 7"	0'- 1"	4	17'- 1"
H	4	18'- 6"	4	9'- 3"	-----	-----	2	4	4'- 6"	2'- 7 $\frac{1}{2}$ "	0'- 1 $\frac{1}{4}$ "	5'- 6"	3'- 7 $\frac{1}{2}$ "	0'- 1 $\frac{1}{4}$ "	4	18'- 7"
I	4	19'- 6"	4	9'- 9"	-----	-----	2	4	4'- 6"	2'- 6 $\frac{1}{4}$ "	0'- 1 $\frac{1}{4}$ "	5'- 6"	3'- 6 $\frac{1}{4}$ "	0'- 1 $\frac{1}{4}$ "	4	19'- 7"
J	4	21'- 0"	4	12'- 8"	6'- 2 $\frac{1}{4}$ "	6'- 5 $\frac{3}{4}$ "	2	4	5'- 0"	2'- 7 $\frac{1}{8}$ "	0'- 1 $\frac{3}{8}$ "	6'- 0"	3'- 7 $\frac{1}{8}$ "	0'- 1 $\frac{3}{8}$ "	4	21'- 2"
K	4	22'- 6"	4	13'- 6"	6'- 7 $\frac{5}{8}$ "	6'- 10 $\frac{3}{8}$ "	2	4	5'- 0"	2'- 5 $\frac{3}{4}$ "	0'- 1 $\frac{3}{8}$ "	6'- 0"	3'- 5 $\frac{3}{4}$ "	0'- 1 $\frac{3}{8}$ "	4	22'- 8"
L	4	24'- 0"	4	16'- 1"	5'- 10 $\frac{1}{4}$ "	5'- 1 $\frac{3}{8}$ "	2	4	5'- 6"	2'- 6"	0'- 1 $\frac{1}{2}$ "	6'- 6"	3'- 6"	0'- 1 $\frac{1}{2}$ "	4	24'- 2"
M	4	25'- 6"	4	18'- 4"	5'- 3 $\frac{1}{2}$ "	6'- 6 $\frac{1}{4}$ "	2	4	5'- 3"	2'- 6 $\frac{1}{2}$ "	0'- 1 $\frac{5}{8}$ "	6'- 3"	3'- 6 $\frac{1}{2}$ "	0'- 1 $\frac{5}{8}$ "	4	25'- 9"
N	4	27'- 0"	4	19'- 5"	5'- 7 $\frac{1}{2}$ "	6'- 10 $\frac{3}{4}$ "	2	4	5'- 4"	2'- 7"	0'- 1 $\frac{1}{2}$ "	6'- 4"	3'- 7"	0'- 1 $\frac{1}{2}$ "	4	27'- 3"
O	4	28'- 0"	4	21'- 1"	5'- 1"	5'- 4"	2	4	5'- 10"	2'- 5 $\frac{3}{4}$ "	0'- 1 $\frac{3}{4}$ "	6'- 10"	3'- 5 $\frac{3}{4}$ "	0'- 1 $\frac{3}{4}$ "	4	28'- 3"
P	4	29'- 6"	4	22'- 3"	5'- 4 $\frac{1}{8}$ "	5'- 7 $\frac{5}{8}$ "	2	4	4'- 10"	2'- 6 $\frac{3}{8}$ "	0'- 1 $\frac{5}{8}$ "	5'- 10"	3'- 6 $\frac{3}{8}$ "	0'- 1 $\frac{5}{8}$ "	4	29'- 9"
Q	4	31'- 0"	4	24'- 3"	4'- 11 $\frac{5}{8}$ "	6'- 5 $\frac{1}{8}$ "	2	4	5'- 1"	2'- 5 $\frac{1}{2}$ "	0'- 1 $\frac{3}{4}$ "	6'- 1"	3'- 5 $\frac{1}{2}$ "	0'- 1 $\frac{3}{4}$ "	4	31'- 4"
R	4	32'- 6"	4	25'- 5"	5'- 2 $\frac{3}{4}$ "	6'- 8 $\frac{3}{4}$ "	2	4	5'- 1"	2'- 6 $\frac{1}{8}$ "	0'- 1 $\frac{5}{8}$ "	6'- 1"	3'- 6 $\frac{1}{8}$ "	0'- 1 $\frac{5}{8}$ "	4	32'- 10"
S	4	34'- 0"	4	27'- 4"	4'- 11"	5'- 7 $\frac{1}{4}$ "	2	4	5'- 3"	2'- 5 $\frac{3}{4}$ "	0'- 1 $\frac{3}{4}$ "	6'- 3"	3'- 5 $\frac{3}{4}$ "	0'- 1 $\frac{3}{4}$ "	4	34'- 4"
T	4	35'- 6"	4	28'- 6"	5'- 1 $\frac{1}{2}$ "	5'- 10 $\frac{1}{8}$ "	2	4	5'- 2"	2'- 7 $\frac{1}{8}$ "	0'- 1 $\frac{5}{8}$ "	6'- 2"	3'- 7 $\frac{1}{8}$ "	0'- 1 $\frac{5}{8}$ "	4	35'- 10"
U	4	36'- 6"	4	30'- 0"	4'- 9 $\frac{1}{2}$ "	6'- 3 $\frac{3}{8}$ "	2	4	5'- 4"	2'- 6 $\frac{3}{4}$ "	0'- 1 $\frac{3}{4}$ "	6'- 4"	3'- 6 $\frac{3}{4}$ "	0'- 1 $\frac{3}{4}$ "	4	36'- 11"
V	4	38'- 0"	4	31'- 3"	4'- 11 $\frac{1}{2}$ "	6'- 6 $\frac{7}{8}$ "	2	4	5'- 5"	2'- 6"	0'- 1 $\frac{3}{4}$ "	6'- 5"	3'- 6"	0'- 1 $\frac{3}{4}$ "	4	38'- 5"
W	4	39'- 6"	4	33'- 1"	4'- 9"	5'- 8"	2	4	5'- 6"	2'- 7"	0'- 1 $\frac{3}{4}$ "	6'- 6"	3'- 7"	0'- 1 $\frac{3}{4}$ "	4	39'- 11"
X	4	41'- 0"	4	34'- 10"	4'- 6 $\frac{1}{4}$ "	6'- 3 $\frac{1}{4}$ "	2	4	5'- 8"	2'- 6 $\frac{1}{2}$ "	0'- 1 $\frac{7}{8}$ "	6'- 8"	3'- 6 $\frac{1}{2}$ "	0'- 1 $\frac{7}{8}$ "	4	41'- 6"
Y	4	42'- 6"	4	36'- 7"	4'- 4"	5'- 4 $\frac{1}{2}$ "	2	4	5'- 6"	2'- 6"	0'- 2"	6'- 6"	3'- 6"	0'- 2"	4	43'- 1"
Z	4	44'- 0"	4	37'- 10"	4'- 6 $\frac{1}{4}$ "	5'- 6 $\frac{5}{8}$ "	2	4	5'- 4"	2'- 6 $\frac{1}{4}$ "	0'- 1 $\frac{7}{8}$ "	6'- 4"	3'- 6 $\frac{1}{4}$ "	0'- 1 $\frac{7}{8}$ "	4	44'- 6"
AA	4	45'- 0"	4	39'- 2"	4'- 3 $\frac{1}{2}$ "	5'- 9 $\frac{3}{4}$ "	2	4	5'- 8"	2'- 6"	0'- 2"	6'- 8"	3'- 6"	0'- 2"	4	45'- 7"
BB	4	46'- 6"	4	40'- 10"	4'- 1 $\frac{1}{8}$ "	5'- 2 $\frac{1}{8}$ "	2	4	5'- 9"	2'- 7"	0'- 2"	6'- 9"	3'- 7"	0'- 2"	4	47'- 2"
CC	4	48'- 0"	4	42'- 10"	3'- 9"	4'- 10 $\frac{3}{4}$ "	2	4	6'- 1"	2'- 6 $\frac{1}{4}$ "	0'- 2 $\frac{1}{4}$ "	7'- 1"	3'- 6 $\frac{1}{4}$ "	0'- 2 $\frac{1}{4}$ "	4	48'- 10"
DD	4	49'- 6"	4	44'- 9"	3'- 6"	4'- 7"	2	4	5'- 11"	2'- 6 $\frac{5}{8}$ "	0'- 2 $\frac{3}{8}$ "	6'- 11"	3'- 6 $\frac{5}{8}$ "	0'- 2 $\frac{3}{8}$ "	4	50'- 6"
EE	4	51'- 0"	4	46'- 1"	3'- 7 $\frac{3}{8}$ "	4'- 8 $\frac{5}{8}$ "	2	4	5'- 10"	2'- 5 $\frac{5}{8}$ "	0'- 2 $\frac{3}{8}$ "	6'- 10"	3'- 5 $\frac{5}{8}$ "	0'- 2 $\frac{3}{8}$ "	4	51'- 11"

BCW-22

WING	SIZE	WF5						WF6			WF7						WH1		WH3			
		a			LENGTH			LENGTH			a			LENGTH			SIZE	LENGTH	SIZE	LENGTH		
		From	To	Vary By	From	To	Vary By	SIZE	From	To	Vary By	From	To	Vary By	From	To					Vary By	
A	--	----	----	----	----	----	4	3'- 6"	2'- 7½"	0'- 1¾"	--	----	----	----	----	----	4	8'- 6"	4	9'- 0"		
B	--	----	----	----	----	----	4	3'- 6"	2'- 6"	0'- 1½"	--	----	----	----	----	----	4	10'- 0"	4	10'- 7"		
C	--	----	----	----	----	----	4	3'- 6"	2'- 7"	0'- 1¾"	--	----	----	----	----	----	4	11'- 0"	4	11'- 8"		
D	--	----	----	----	----	----	4	3'- 6"	2'- 6¾"	0'- 1½"	--	----	----	----	----	----	4	12'- 6"	4	13'- 3"		
E	--	----	----	----	----	----	4	3'- 6"	2'- 7"	0'- 1"	--	----	----	----	----	----	4	14'- 0"	4	14'-10"		
F	--	----	----	----	----	----	4	4'- 0"	2'- 7½"	0'- 1¾"	--	----	----	----	----	----	4	15'- 6"	4	16'- 5"		
G	--	----	----	----	----	----	4	4'- 0"	2'- 7¾"	0'- 1¼"	--	----	----	----	----	----	4	17'- 0"	4	18'- 0"		
H	--	----	----	----	----	----	4	4'- 6"	2'- 7¼"	0'- 1½"	--	----	----	----	----	----	4	18'- 6"	4	19'- 7"		
I	--	----	----	----	----	----	4	4'- 6"	2'- 7½"	0'- 1½"	--	----	----	----	----	----	4	19'- 6"	4	20'- 8"		
J	--	----	----	----	----	----	4	5'- 0"	2'- 8"	0'- 1¾"	--	----	----	----	----	----	4	21'- 0"	4	22'- 3"		
K	--	----	----	----	----	----	4	5'- 0"	2'- 6¾"	0'- 1½"	--	----	----	----	----	----	4	22'- 6"	4	23'-10"		
L	--	----	----	----	----	----	4	5'- 6"	2'- 6¾"	0'- 1½"	--	----	----	----	----	----	4	24'- 0"	4	25'- 5"		
M	4	6'- 0"	5'- 4½"	0'- 1¼"	7'- 0"	6'- 4½"	0'- 1¼"	4	6'- 0"	2'- 8"	0'- 2"	--	----	----	----	----	4	25'- 6"	4	27'- 0"		
N	4	6'- 0"	5'- 5¾"	0'- 1¼"	7'- 0"	6'- 5¾"	0'- 1¼"	4	6'- 0"	2'- 8½"	0'- 1½"	--	----	----	----	----	4	27'- 0"	4	28'- 7"		
O	4	6'- 6"	5'- 11½"	0'- 1¾"	7'- 6"	6'- 11½"	0'- 1¾"	4	6'- 6"	2'- 7¼"	0'- 2½"	--	----	----	----	----	4	28'- 0"	4	29'- 8"		
P	4	5'-10"	4'-10¾"	0'- 1¼"	6'-10"	5'-10¾"	0'- 1¼"	4	6'- 6"	2'- 8"	0'- 2"	4	6'- 6"	5'-11"	0'- ¾"	7'- 6"	6'-11"	0'- ¾"	4	29'- 6"	4	31'- 3"
Q	4	6'- 3"	5'- 2½"	0'- 1¾"	7'- 3"	6'- 2½"	0'- 1¾"	4	7'- 0"	2'- 9"	0'- 2½"	4	7'- 0"	6'- 4½"	0'- ¾"	8'- 0"	7'- 4½"	0'- ¾"	4	31'- 0"	4	32'-10"
R	4	6'- 2"	5'- 2¾"	0'- 1¼"	7'- 2"	6'- 2¾"	0'- 1¼"	4	7'- 0"	2'- 4¾"	0'- 2½"	4	7'- 0"	6'- 3¼"	0'- ¾"	8'- 0"	7'- 3¼"	0'- ¾"	4	32'- 6"	4	34'- 5"
S	4	6'- 5"	5'- 4½"	0'- 1¾"	7'- 5"	6'- 4½"	0'- 1¾"	4	7'- 6"	2'- 5¼"	0'- 2¼"	4	7'- 6"	6'- 6½"	0'- ¾"	8'- 6"	7'- 6½"	0'- ¾"	4	34'- 0"	4	36'- 0"
T	5	6'- 5¼"	5'- 3½"	0'- 1¼"	7'- 7"	6'- 5¼"	0'- 1¼"	4	7'- 6"	2'- 6½"	0'- 2½"	5	7'- 5¼"	6'- 7½"	0'- ¾"	8'- 7"	7'- 9¼"	0'- ¾"	4	35'- 6"	4	37'- 7"
U	5	6'-11¼"	5'- 5¾"	0'- 1¾"	8'- 1"	6'- 7½"	0'- 1¾"	4	8'- 0"	2'- 6¾"	0'- 2¼"	5	7'-11¼"	7'- ¾"	0'- ¾"	9'- 1"	8'- 2½"	0'- ¾"	4	36'- 6"	4	38'- 9"
V	5	6'-11¼"	5'- 7"	0'- 1¼"	8'- 1"	6'- 8¾"	0'- 1¼"	4	8'- 0"	2'- 8¼"	0'- 2½"	5	7'-11¼"	6'-11¾"	0'- ¾"	9'- 1"	8'- 1½"	0'- ¾"	4	38'- 0"	4	40'- 4"
W	5	7'- 4¼"	5'- 7½"	0'- 1¾"	8'- 6"	6'- 9¾"	0'- 1¾"	4	8'- 6"	2'- 8¼"	0'- 2¼"	5	8'- 5¼"	7'- 5¾"	0'- ¾"	9'- 7"	8'- 7¾"	0'- ¾"	4	39'- 6"	4	41'-11"
X	5	7'-10¼"	5'-10¾"	0'- 1¾"	9'- 0"	7'- ¾"	0'- 1¾"	4	8'-11"	2'- 7"	0'- 2¾"	5	8'-11¼"	7'-11¾"	0'- ¾"	10'- 1"	9'- 1½"	0'- ¾"	4	41'- 0"	4	43'- 6"
Y	5	7'-11¼"	5'- 6¾"	0'- 1½"	9'- 1"	6'- 8½"	0'- 1½"	4	9'- 5"	2'- 8¼"	0'- 2¾"	5	9'- 5¼"	8'- ¼"	0'- 1"	10'- 7"	9'- 2"	0'- 1"	4	42'- 6"	4	45'- 0"
Z	5	8'- ¼"	5'- 7¾"	0'- 1¾"	9'- 2"	6'- 9½"	0'- 1¾"	4	9'- 5"	2'- 5¾"	0'- 2¾"	5	9'- 5¼"	8'- 2¾"	0'- ¾"	10'- 7"	9'- 4½"	0'- ¾"	4	44'- 0"	4	46'- 7"
AA	6	8'- 5½"	5'-10"	0'- 1½"	9'-10"	7'- 2½"	0'- 1½"	4	9'-11"	2'- 5"	0'- 2½"	6	9'-11½"	8'- 6½"	0'- 1"	11'- 4"	9'-11"	0'- 1"	4	45'- 0"	4	47'- 9"
BB	6	8'-10½"	6'- 0"	0'- 1½"	10'- 3"	7'- 4½"	0'- 1½"	4	10'- 5"	2'- 8½"	0'- 2½"	6	10'- 5½"	9'- ½"	0'- 1"	11'-10"	10'- 5"	0'- 1"	4	46'- 6"	4	49'- 4"
CC	6	9'- 8½"	6'- 3¾"	0'- 1¾"	11'- 1"	7'- 8¾"	0'- 1¾"	4	11'- 5"	2'- 8½"	0'- 2¾"	6	11'- 5½"	9'-10¾"	0'- 1½"	12'-10"	11'- 2¾"	0'- 1½"	4	48'- 0"	4	50'-11"
DD	6	10'- 2½"	6'- 3¼"	0'- 1¾"	11'- 7"	7'- 7¾"	0'- 1¾"	4	12'- 5"	2'- 8"	0'- 3"	7	12'- 5¾"	10'- 3½"	0'- 1¼"	14'- 1"	11'-10¾"	0'- 1¼"	4	49'- 6"	4	52'- 6"
EE	7	10'- 2¾"	6'- 0"	0'- 1¾"	11'-10"	7'- 7¼"	0'- 1¾"	4	12'- 5"	2'-10"	0'- 2½"	7	12'- 5¾"	10'- 6½"	0'- 1½"	14'- 1"	12'- 1¾"	0'- 1½"	4	51'- 0"	4	54'- 1"

Sheet 5 of 7

1006.26

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

STRUCTURE
 AND
 BRIDGE
 DIVISION

WING	SIZE	WH2				WV1						WV2				
		LENGTH				SIZE	a			LENGTH			SIZE	LENGTH		
		From	To	Vary By	# Ea		From	To	Vary By	From	To	Vary By		From	To	Vary By
A	4	6'- 6"	2'-10 1/2"	3'- 7 1/2"	2	4	5'- 1/4"	2'- 3/4"	0'- 4/8"	7'- 0"	4'- 3"	0'- 4/8"	4	5'- 0"	2'- 5/4"	0'- 5/8"
B	4	6'- 7"	2'-10 3/8"	3'- 8 3/8"	2	4	5'- 6/4"	2'- 1"	0'- 4/8"	7'- 6"	4'- 3/4"	0'- 4/8"	4	5'- 6"	2'- 1"	0'- 5/8"
C	4	9'-10"	2'- 9 1/4"	3'- 6 3/8"	2	4	6'- 1/4"	2'- 1 1/2"	0'- 4/4"	8'- 0"	4'- 1 1/4"	0'- 4/4"	4	6'- 0"	2'- 5"	0'- 5 3/8"
D	4	9'-10"	2'- 9 1/2"	3'- 6 1/4"	2	4	6'- 6/4"	2'- 3/4"	0'- 4/4"	8'- 6"	4'- 3"	0'- 4/4"	4	6'- 6"	2'- 1/4"	0'- 5 3/8"
E	4	13'- 6"	2'- 9 3/4"	3'- 6 3/4"	2	4	7'- 1/4"	2'- 3/4"	0'- 4/4"	9'- 0"	4'- 1/2"	0'- 4/4"	4	7'- 0"	2'- 2/4"	0'- 5/4"
F	4	13'- 7"	2'-10"	3'- 7"	2	4	7'- 6/4"	2'- 2 1/2"	0'- 4/4"	9'- 6"	4'- 2 1/4"	0'- 4/4"	4	7'- 6"	2'- 3"	0'- 5/4"
G	4	13'- 7"	2'-10"	3'- 7"	2	4	8'- 1/4"	2'- 0"	0'- 4/4"	10'- 0"	3'-11 3/4"	0'- 4/4"	4	8'- 0"	2'- 3 3/4"	0'- 5 1/4"
H	4	17'- 3"	2'-10"	3'- 7 1/4"	2	4	8'- 6/4"	2'- 4"	0'- 4/8"	10'- 6"	4'- 3 3/4"	0'- 4/8"	4	8'- 6"	2'- 4 1/2"	0'- 5/4"
I	4	16'-11"	2'- 9 1/2"	3'- 6 3/8"	2	4	9'- 1/4"	2'- 3 1/2"	0'- 4/4"	11'- 0"	4'- 3 1/4"	0'- 4/4"	4	9'- 0"	2'- 3 3/8"	0'- 5 3/8"
J	4	20'- 6"	2'- 9 1/2"	3'- 6 1/2"	2	4	9'- 6/4"	2'- 1"	0'- 4/4"	11'- 6"	4'- 3/4"	0'- 4/4"	4	9'- 6"	2'- 6"	0'- 5 1/4"
K	4	20'- 7"	2'- 9 3/8"	3'- 6 5/8"	2	4	10'- 1/4"	2'- 2 3/4"	0'- 4/4"	12'- 0"	4'- 2 1/2"	0'- 4/4"	4	10'- 0"	2'- 1 1/2"	0'- 5/4"
L	4	20'- 8"	2'- 9 3/8"	3'- 6 5/8"	2	4	8'- 1/4"	2'- 0"	0'- 4/4"	10'- 0"	3'-11 3/4"	0'- 4/4"	4	10'- 6"	2'- 2 1/4"	0'- 5 1/4"
M	4	24'- 3"	2'- 9 3/4"	3'- 6 7/8"	2	4	8'- 1/4"	2'- 0"	0'- 4/4"	10'- 0"	3'-11 3/4"	0'- 4/4"	4	11'- 0"	2'- 3"	0'- 5/4"
N	4	24'- 4"	2'-10"	3'- 7"	2	4	6'- 3/4"	2'- 1/4"	0'- 4/4"	8'- 3"	4'- 0"	0'- 4/4"	4	11'- 6"	2'- 3 3/4"	0'- 5/4"
O	4	27'- 6"	2'- 9 3/8"	3'- 6 3/8"	2	4	6'- 8/4"	2'- 1"	0'- 4/4"	8'- 8"	4'- 3/4"	0'- 4/4"	4	12'- 0"	2'- 1 3/4"	0'- 5 3/8"
P	4	27'- 7"	2'- 9 1/2"	3'- 6 1/2"	2	4	7'- 4/4"	2'- 1/2"	0'- 4/4"	9'- 4"	4'- 1/4"	0'- 4/4"	4	12'- 6"	2'- 5/4"	0'- 5/4"
Q	4	27'- 8"	2'- 9 5/8"	3'- 6 5/8"	2	4	7'- 4/4"	2'- 1/2"	0'- 4/4"	9'- 4"	4'- 1/4"	0'- 4/4"	4	13'- 0"	2'- 6"	0'- 5/4"
R	4	31'- 3"	2'-10"	3'- 6 5/8"	2	4	7'- 4/4"	2'- 1/2"	0'- 4/4"	9'- 4"	4'- 1/4"	0'- 4/4"	4	13'- 6"	2'- 1 1/2"	0'- 5 1/4"
S	4	31'- 4"	2'-10"	3'- 6 3/4"	2	4	7'- 4/4"	2'- 1/2"	0'- 4/4"	9'- 4"	4'- 1/4"	0'- 4/4"	4	14'- 0"	2'- 2 1/4"	0'- 5/4"
T	4	35'- 0"	2'-10 1/8"	3'- 6 1/8"	2	4	6'-11 1/4"	2'- 1 1/2"	0'- 4/8"	8'-11"	4'- 1 1/4"	0'- 4/8"	4	14'- 6"	2'- 3"	0'- 5/4"
U	4	34'- 7"	2'- 9 3/8"	3'- 6 3/8"	2	4	7'- 1/4"	2'- 3/4"	0'- 4/4"	9'- 0"	4'- 1/2"	0'- 4/4"	4	15'- 0"	2'- 3 3/4"	0'- 5 1/4"
V	4	34'- 8"	2'- 9 1/2"	3'- 6 1/2"	2	4	7'- 4/4"	2'- 1/2"	0'- 4/4"	9'- 4"	4'- 1/4"	0'- 4/4"	4	15'- 6"	2'- 4 1/2"	0'- 5/4"
W	4	38'- 3"	2'-10"	3'- 6 1/2"	2	4	7'- 7/4"	2'- 3/2"	0'- 4/4"	9'- 7"	4'- 3/4"	0'- 4/4"	4	16'- 3"	2'- 8/4"	0'- 5 1/4"
X	4	38'- 4"	2'- 9 3/4"	3'- 6 5/8"	2	4	8'- 6/4"	2'- 6"	0'- 4/4"	10'- 6"	4'- 5 3/4"	0'- 4/4"	4	17'- 0"	3'- 0"	0'- 5 1/4"
Y	4	42'- 0"	2'- 9 3/4"	3'- 6 3/4"	2	4	9'- 7/4"	2'- 6/4"	0'- 4/4"	11'- 7"	4'- 6"	0'- 4/4"	4	17'- 6"	2'- 7 1/2"	0'- 5/4"
Z	4	42'- 1"	2'- 9 3/8"	3'- 6 3/8"	2	4	9'- 7/4"	2'- 6/4"	0'- 4/4"	11'- 7"	4'- 6"	0'- 4/4"	4	18'- 0"	2'- 8/4"	0'- 5 1/4"
AA	4	41'- 8"	2'- 9 3/8"	3'- 6 3/8"	2	4	10'- 1/4"	2'- 7"	0'- 4/4"	12'- 0"	4'- 6 3/4"	0'- 4/4"	4	18'- 6"	2'- 9"	0'- 5/4"
BB	4	45'- 3"	2'- 9"	3'- 6 1/2"	2	4	10'- 1/4"	2'- 7"	0'- 4/4"	12'- 0"	4'- 6 3/4"	0'- 4/4"	4	19'- 0"	2'- 9 3/4"	0'- 5 1/4"
CC	4	45'- 4"	2'-10"	3'- 6 1/2"	2	4	9'- 3/4"	2'- 6 1/2"	0'- 4/4"	11'- 3"	4'- 6 1/4"	0'- 4/4"	4	19'- 6"	2'-10 1/2"	0'- 5 1/4"
DD	4	49'- 0"	2'- 9 3/8"	3'- 6 5/8"	2	4	8'-11 1/4"	2'- 6 3/4"	0'- 4/4"	10'-11"	4'- 6 1/2"	0'- 4/4"	4	20'- 0"	2'-11 1/4"	0'- 5/4"
EE	4	49'- 1"	2'- 9 1/4"	3'- 6 3/4"	2	4	8'-10 1/4"	2'- 5 3/4"	0'- 4/4"	10'-10"	4'- 5 1/2"	0'- 4/4"	4	20'- 6"	3'- 0"	0'- 5/4"

WING	SIZE	WV3						SIZE	WV4					
		a			LENGTH				a			LENGTH		
		From	To	Vary By	From	To	Vary By		From	To	Vary By	From	To	Vary By
A	--	----	----	----	----	----	----	----	----	----	----	----	----	----
B	--	----	----	----	----	----	----	----	----	----	----	----	----	----
C	--	----	----	----	----	----	----	----	----	----	----	----	----	----
D	--	----	----	----	----	----	----	----	----	----	----	----	----	----
E	--	----	----	----	----	----	----	----	----	----	----	----	----	----
F	--	----	----	----	----	----	----	----	----	----	----	----	----	----
G	--	----	----	----	----	----	----	----	----	----	----	----	----	----
H	--	----	----	----	----	----	----	----	----	----	----	----	----	----
I	--	----	----	----	----	----	----	----	----	----	----	----	----	----
J	--	----	----	----	----	----	----	----	----	----	----	----	----	----
K	--	----	----	----	----	----	----	----	----	----	----	----	----	----
L	4	10'- 6/4"	8'- 4/4"	0'- 3/4"	12'- 6"	10'- 4"	0'- 3/4"	--	----	----	----	----	----	----
M	4	11'- 1/4"	8'- 3/4"	0'- 3/4"	13'- 0"	10'- 3/2"	0'- 3/4"	--	----	----	----	----	----	----
N	4	10'- 1/4"	6'- 7/8"	0'- 3/8"	12'- 0"	8'- 7/8"	0'- 3/8"	4	11'- 6/4"	10'- 3/8"	0'- 2/8"	13'- 6"	12'- 3/8"	0'- 2/8"
O	4	10'- 6/4"	7'- 0"	0'- 3/4"	12'- 6"	8'- 11/4"	0'- 3/4"	4	12'- 1/4"	10'- 9/8"	0'- 2/8"	14'- 0"	12'- 9/8"	0'- 2/8"
P	4	11'- 2/4"	7'- 8"	0'- 3/4"	13'- 2"	9'- 7/4"	0'- 3/4"	4	12'- 6/4"	11'- 4/4"	0'- 2/4"	14'- 6"	13'- 4/2"	0'- 2/4"
Q	4	11'- 1/4"	7'- 8/8"	0'- 3/8"	13'- 1"	9'- 8/8"	0'- 3/8"	4	13'- 1/4"	11'- 5/8"	0'- 2/8"	15'- 0"	13'- 4/8"	0'- 2/8"
R	4	11'- 1/4"	7'- 8/8"	0'- 3/8"	13'- 1"	9'- 8/8"	0'- 3/8"	5	13'- 5/4"	11'- 4/4"	0'- 2/8"	15'- 6"	13'- 4/2"	0'- 2/8"
S	4	11'- 1/4"	7'- 8/8"	0'- 3/8"	13'- 1"	9'- 8/8"	0'- 3/8"	5	13'- 11/4"	11'- 3/8"	0'- 2/8"	16'- 0"	13'- 4/8"	0'- 2/8"
T	4	11'- 3/4"	7'- 4/8"	0'- 3/8"	13'- 3"	9'- 4/8"	0'- 3/8"	5	14'- 5/4"	11'- 5/8"	0'- 2/8"	16'- 6"	13'- 5/8"	0'- 2/8"
U	5	11'- 10/4"	7'- 3/2"	0'- 3/4"	13'- 11"	9'- 3/4"	0'- 3/4"	5	14'- 11/4"	12'- 1/4"	0'- 2/8"	17'- 0"	14'- 2"	0'- 2/8"
V	5	12'- 2/4"	7'- 9/8"	0'- 3/8"	14'- 3"	9'- 9/8"	0'- 3/8"	6	15'- 5/8"	12'- 5/2"	0'- 2/8"	17'- 7"	14'- 6/8"	0'- 2/8"
W	5	12'- 11/4"	8'- 3/8"	0'- 3/8"	15'- 0"	10'- 5/8"	0'- 3/8"	6	16'- 2/8"	13'- 2/2"	0'- 2/8"	18'- 4"	15'- 3/8"	0'- 2/8"
X	6	13'- 4/8"	8'- 11/2"	0'- 3/8"	15'- 6"	11'- 7/8"	0'- 3/8"	6	16'- 11/8"	13'- 7/4"	0'- 2/8"	19'- 1"	15'- 8/8"	0'- 2/8"
Y	6	13'- 10/8"	9'- 11/4"	0'- 3/8"	16'- 0"	12'- 1/8"	0'- 3/8"	6	17'- 5/8"	14'- 1/4"	0'- 2/8"	19'- 7"	16'- 2/8"	0'- 2/8"
Z	6	14'- 4/8"	9'- 11/2"	0'- 3/8"	16'- 6"	12'- 7/8"	0'- 3/8"	6	17'- 11/8"	14'- 7/4"	0'- 2/8"	20'- 1"	16'- 8/8"	0'- 2/8"
AA	6	14'- 10/8"	10'- 3/8"	0'- 3/4"	17'- 0"	12'- 4/4"	0'- 3/4"	7	18'- 5/8"	15'- 1/4"	0'- 2/8"	20'- 8"	17'- 3/8"	0'- 2/8"
BB	6	15'- 4/8"	10'- 2/8"	0'- 3/4"	17'- 6"	12'- 4/4"	0'- 3/4"	7	18'- 11/8"	15'- 7/4"	0'- 2/8"	21'- 2"	17'- 9/8"	0'- 2/8"
CC	6	15'- 1/8"	9'- 8"	0'- 3/8"	17'- 3"	11'- 9/8"	0'- 3/8"	7	19'- 5/8"	15'- 4/4"	0'- 2/8"	21'- 8"	17'- 7/8"	0'- 2/8"
DD	6	15'- 3/8"	9'- 3/4"	0'- 3/8"	17'- 5"	11'- 5/8"	0'- 3/8"	7	19'- 11/8"	15'- 6/2"	0'- 2/8"	22'- 2"	17'- 8/8"	0'- 2/8"
EE	7	15'- 9/8"	9'- 3/2"	0'- 3/8"	18'- 0"	11'- 5/8"	0'- 3/8"	8	20'- 5/2"	16'- 3/8"	0'- 2/8"	22'- 9"	18'- 3/8"	0'- 2/8"