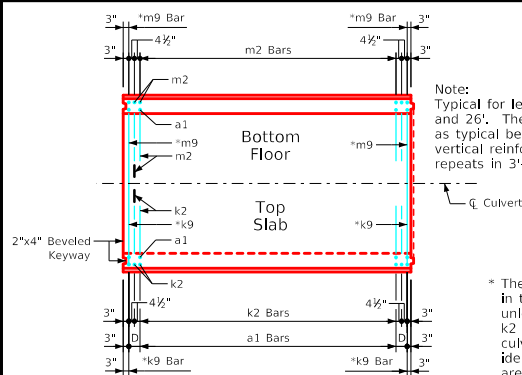
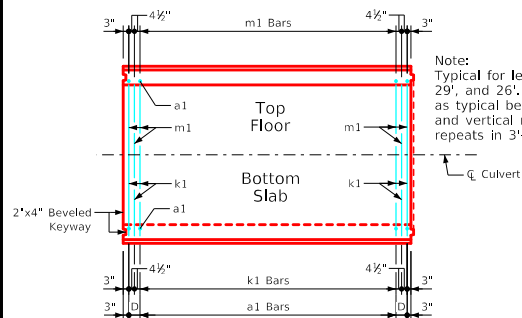




Note:
Typical for lengths of 38', 35', 32', 29',
and 26'. These lengths are shown
as typical because all transverse and
vertical reinforcing steel spacing
repeats in 3'-0" intervals.

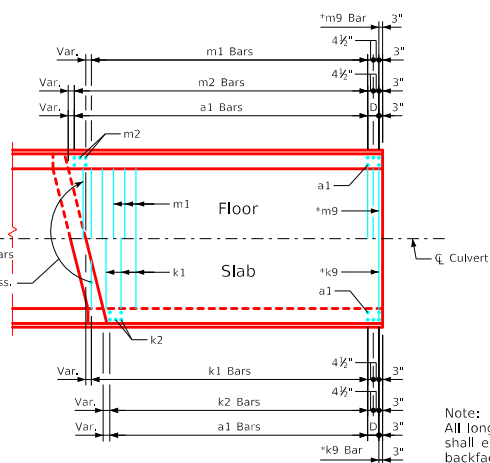
* The k9 and m9 bars are to be placed in the top slab and bottom floor unless the horizontal legs of the k2 and m2 bars touch or lap. The culvert barrel detail standards identify when the k9 and m9 bars are omitted.

Standard Section Plan View
(Keyway is to be omitted when bell joints are used)



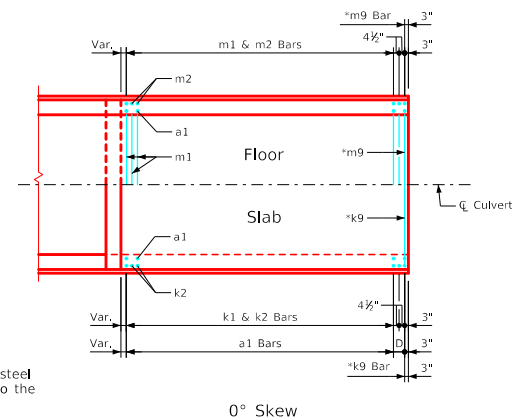
Note:
Typical for lengths of 38', 35', 32',
29', and 26'. These lengths are shown
as typical because all transverse
and vertical reinforcing steel spacing
repeats in 3'-0" intervals.

Standard Section Plan View
(Keyway is to be omitted when bell joints are used)



Note:
All longitudinal barrel steel
shall extend at least to the
backface of parapet.

Typical Skew



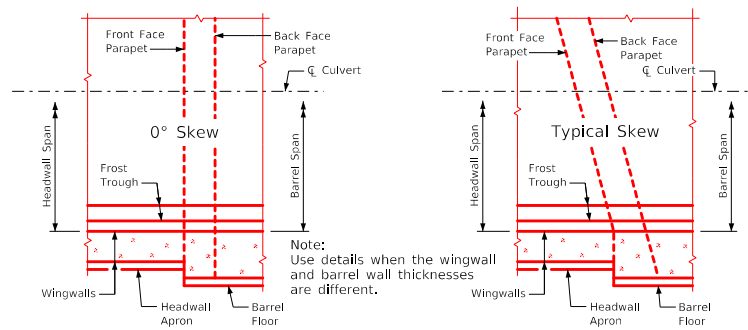
0° Skew

End Section Plan Views
(Keyways not shown)

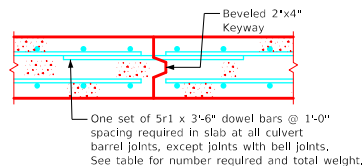
Note:
End section details shown are for a 15° skew barrel.
Use for skews of 30° & 45° by increasing the number
of transverse reinforcing bars required to be cut
and relocated.

Span	No.	Weight (LB)
3'-0"	4	15
4'-0"	5	18
5'-0"	6	22
6'-0"	7	26
8'-0"	9	33
10'-0"	11	40
12'-0"	13	47
14'-0"	15	55
16'-0"	17	62

Note:
Dimensions listed on this sheet to be used in
conjunction with dimensions and quantities for
barrel section sheets.



Transition Wall Details



Top Slab Construction Joint Detail

LATEST REVISION DATE  APPROVED BY BRIDGE ENGINEER		
	Standard Design Single Reinforced Concrete Box Culverts July, 2020	
	Typical Culvert Barrel Details	RCB G3-20

Variable Dimensions and Quantities for 10' x 5' Barrel Sections

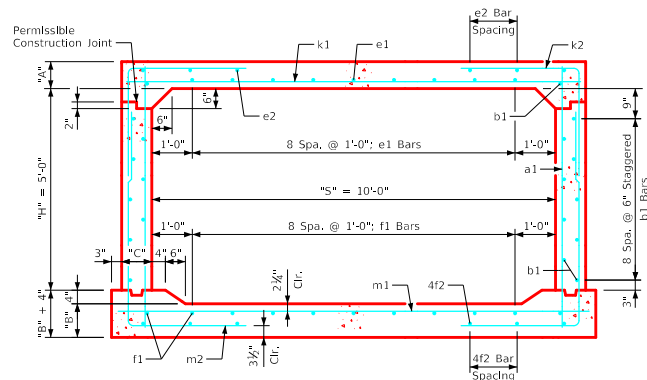
Dimensions						Bar List																								Quantities																			
						a1		b1		e1		e2		f1		f2		k1		k2		k9		m1		m2		m9		Slab	Concrete (CY/FT)		Total	Steel (LB/FT)															
Fill	S	H	A	B	C	D	Size	Sp.	L	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Floor	Walls											
0	10	5	12.5	12	9	9	4	12	6'-11"	4	6	20	4	12	9	4	15	6	4	12	11	4	13	8	6	9	11'-2"	6	12	7'-1	3'-2	3'-11"	6	11'-2"	6	9	11'-8"	7	12	9'-4	3'-11"	5'-5"	7	11'-8"	0.476	0.481	0.257	1.214	159.32
1	10	5	11.5	12	9	6	4	6	6'-10"	4	6	20	4	12	9	4	15	6	4	12	11	4	15	6	6	9	11'-2"	4	6	6'-4	3'-2	3'-2"	4	11'-2"	6	9	11'-8"	4	6	8'-6	3'-1	5'-5"	4	11'-8"	0.441	0.481	0.257	1.179	141.50
2	10	5	8	10	9	9	4	9	6'-5"	4	6	20	5	12	9	4	15	6	4	12	11	4	15	6	7	9	11'-2"	5	6	6'-2	3'-1	3'-1"	5	11'-2"	6	6	11'-8"	5	6	8'-4	3'-1	5'-3"	5	11'-8"	0.316	0.407	0.257	0.980	179.18
3	10	5	8	10	9	9	4	12	6'-5"	4	6	20	4	12	9	4	15	6	4	12	11	4	14	6	7	9	11'-2"	5	6	6'-2	3'-1	3'-1"	5	11'-2"	7	9	11'-8"	5	6	8'-2	2'-11"	5'-3"	5	11'-8"	0.316	0.407	0.257	0.980	170.16
4-7	10	5	8	10	9	9	4	12	6'-5"	4	6	20	4	12	9	4	15	6	4	12	11	4	14	6	7	9	11'-2"	5	6	6'-2	3'-1	3'-1"	5	11'-2"	6	6	11'-8"	5	6	8'-2	2'-11"	5'-3"	5	11'-8"	0.316	0.407	0.257	0.980	172.39
8-10	10	5	8	10.5	9	9	4	12	6'-5"	4	6	20	4	12	9	4	15	6	4	12	11	4	12	6	6	6	11'-2"	5	6	6'-2	3'-1	3'-1"	5	11'-2"	6	6	11'-8"	5	6	8'-0	2'-8"	5'-4"	5	11'-8"	0.316	0.425	0.257	0.998	173.82
11-15	10	5	8.5	10.5	9	9	5	12	6'-6"	4	6	20	4	12	9	4	12	6	4	12	11	4	12	6	7	6	11'-2"	5	6	5'-8	2'-7	3'-1"	5	11'-2"	7	6	11'-8"	5	6	7'-11	2'-7"	5'-4"	5	11'-8"	0.334	0.425	0.257	1.016	201.55
16-20	10	5	10.5	13	9	9	5	12	6'-10"	4	6	20	4	12	9	4	10	6	4	12	11	4	10	6	7	6	11'-2"	5	6	5'-7	2'-3	3'-4"	5	11'-2"	7	6	11'-8"	5	6	7'-9	2'-3"	5'-6"	5	11'-8"	0.405	0.518	0.257	1.180	201.21
21-25	10	5	12.5	14.5	9	9	4	9	7'-2"	4	6	20	4	12	9	4	9	6	4	12	11	4	10	6	8	6	11'-2"	5	6	5'-7	2'-2	3'-5"	5	11'-2"	8	6	11'-8"	5	6	7'-11	2'-3"	5'-8"	5	11'-8"	0.476	0.574	0.257	1.307	229.13
26-30	10	5	14	16	9	9	4	12	7'-5"	4	6	20	4	12	9	4	10	6	4	12	11	4	10	6	8	6	11'-2"	5	6	5'-10	2'-3	3'-7"	5	11'-2"	8	6	11'-8"	5	6	8'-0	2'-3"	5'-9"	5	11'-8"	0.529	0.629	0.257	1.415	227.84
31-35	10	5	15	17.5	9.5	9	4	9	7'-7"	4	6	20	4	12	9	4	11	6	4	12	11	4	10	6	8	6	11'-3"	5	6	6'-3	2'-7	3'-8"	5	11'-3"	8	6	11'-9"	5	6	8'-4	2'-5"	5'-11"	5	11'-9"	0.570	0.690	0.271	1.531	235.39
36-40	10	5	16.5	19	10	9	4	9	7'-10"	4	6	20	4	12	9	4	12	6	4	12	11	4	11	6	8	6	11'-4"	5	6	6'-6	2'-8	3'-10"	5	11'-4"	8	6	11'-10"	5	6	8'-6	2'-6"	6'-0"	5	11'-10"	0.629	0.752	0.285	1.666	238.50
41-45	10	5	17.5	20	10.5	9	4	9	8'-0"	4	6	20	4	12	9	4	11	6	4	12	11	4	11	6	9	6	11'-5"	5	6	6'-7	2'-8	3'-11"	5	11'-5"	9	6	11'-11"	5	6	8'-8"	2'-7"	6'-1"	5	11'-11"	0.671	0.794	0.301	1.766	275.26
46-50	10	5	19	21	11	9	4	9	8'-3"	4	6	20	4	12	9	4	12	6	4	12	11	4	12	6	9	6	11'-6"	5	6	6'-9	2'-9	4'-0"	5	11'-6"	9	6	12'-0"	5	6	8'-11	2'-9"	6'-2"	5	12'-0"	0.731	0.839	0.315	1.885	278.63
51-55	10	5	20	22.5	11.5	9	5	12	8'-5"	4	6	20	4	12	9	4	12	6	5	12	11	4	12	6	9	6	11'-7"	5	6	6'-11	2'-10	4'-1"	5	11'-7"	9	6	12'-1"	5	6	9'-2	2'-10"	6'-4"	5	12'-1"	0.774	0.902	0.329	2.005	288.84

Bent Bar Detail

Bars	D
4	3"
5	3 3/4"
6	4 1/2"
7	5 1/2"

k2 & m2

Note:
All dimensions are out to out.
D = pin diameter.



10' x 5' Barrel Section

Notes:

- Dimensions listed on this sheet to be used in conjunction with Sheet RCB G3-20.
- The k2 and m2 bars horizontal legs may lap in low fill situations.
- Fill dimensions "S" and "H" are in feet.
- Dimensions "A", "B", "C", "D", and "Sp." listed in the bar list are in inches.
- Dimensions "L", "H", "V" are in feet and inches.

LATEST REVISION DATE

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IOWADOT Highway Division

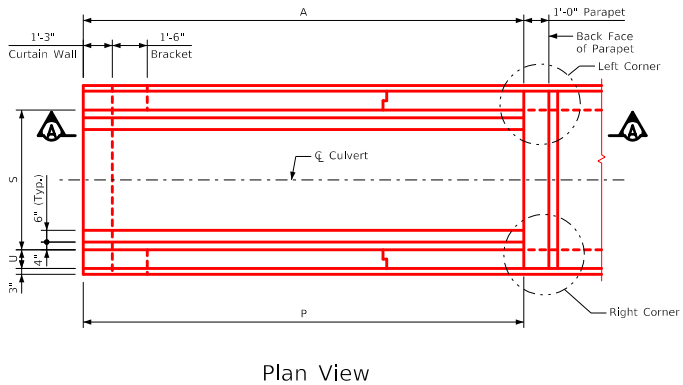
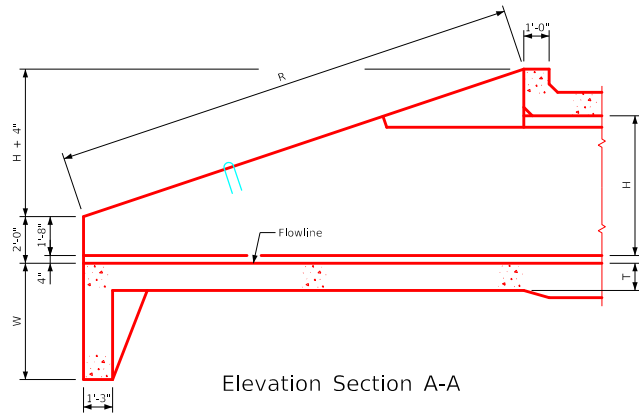
Standard Design
Single Reinforced Concrete
Box Culverts

July, 2020

Culvert Barrel
Details

10' x 5' Barrel Sections

RCB 10-5-20



Dimension Table

S x H	16' x 14'	16' x 13'	16' x 12'	16' x 11'	16' x 10'	16' x 9'	16' x 8'	16' x 7'	16' x 6'	16' x 5'	16' x 4'	14' x 14'	14' x 13'	14' x 12'	14' x 11'	14' x 10'	14' x 9'	14' x 8'	14' x 7'	14' x 6'	14' x 5'	14' x 4'	S x H
A	43'-0	40'-0	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	43'-0	40'-0	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	A
H	14'-0	13'-0	12'-0	11'-0	10'-0	9'-0	8'-0	7'-0	6'-0	5'-0	4'-0	14'-0	13'-0	12'-0	11'-0	10'-0	9'-0	8'-0	7'-0	6'-0	5'-0	4'-0	H
P	43'-0	40'-0	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	43'-0	40'-0	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	P
R	45'-3/8	42'-2	39'-0	35'-10 1/8	32'-8 1/2	29'-6 1/2	26'-4 1/2	23'-2 1/2	20'-0 1/2	16'-10 1/2	13'-8 1/2	45'-3/8	42'-2	39'-0	35'-10 1/8	32'-8 1/2	29'-6 1/2	26'-4 1/2	23'-2 1/2	20'-0 1/2	16'-10 1/2	13'-8 1/2	R
S	16'-0	16'-0	16'-0	16'-0	16'-0	16'-0	16'-0	16'-0	16'-0	16'-0	16'-0	14'-0	14'-0	14'-0	14'-0	14'-0	14'-0	14'-0	14'-0	14'-0	14'-0	14'-0	S
T	1'-4	1'-4	1'-4	1'-4	1'-4	1'-4	1'-4	1'-4	1'-4	1'-4	1'-4	1'-3	1'-3	1'-3	1'-3	1'-3	1'-3	1'-3	1'-3	1'-3	1'-3	1'-3	T
U	1'-1	1'-1	1'-0	1'-0	10	10	10	9	9	9	9	1'-1	1'-1	1'-0	1'-0	10	10	10	9	9	9	9	U
W	5'-6	5'-3	5'-0	4'-9	4'-6	4'-3	4'-0	3'-9	3'-6	3'-6	3'-6	5'-6	5'-3	5'-0	4'-9	4'-6	4'-3	4'-0	3'-9	3'-6	3'-6	3'-6	W
B	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	9	9	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	B
C	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	9	9	9	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	9	9	9	1'-0	1'-0	1'-0	C
D	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	D
E	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	9	9	9	E

Dimension Table

S x H	12' x 12'	12' x 11'	12' x 10'	12' x 9'	12' x 8'	12' x 7'	12' x 6'	12' x 5'	12' x 4'	10' x 12'	10' x 11'	10' x 10'	10' x 9'	10' x 8'	10' x 7'	10' x 6'	10' x 5'	10' x 4'	S x H
A	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	A
H	12'-0	11'-0	10'-0	9'-0	8'-0	7'-0	6'-0	5'-0	4'-0	12'-0	11'-0	10'-0	9'-0	8'-0	7'-0	6'-0	5'-0	4'-0	H
P	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	37'-0	34'-0	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	P
R	39'-0	35'-10 1/8	32'-8 1/2	29'-6 1/2	26'-4 1/2	23'-2 1/2	20'-0 1/2	16'-10 1/2	13'-8 1/2	39'-0	35'-10 1/8	32'-8 1/2	29'-6 1/2	26'-4 1/2	23'-2 1/2	20'-0 1/2	16'-10 1/2	13'-8 1/2	R
S	12'-0	12'-0	12'-0	12'-0	12'-0	12'-0	12'-0	12'-0	12'-0	10'-0	10'-0	10'-0	10'-0	10'-0	10'-0	10'-0	10'-0	10'-0	S
T	1'-2	1'-2	1'-2	1'-2	1'-2	1'-2	1'-2	1'-2	1'-2	1'-1	1'-1	1'-1	1'-1	1'-1	1'-1	1'-1	1'-1	1'-1	T
U	1'-0	1'-0	10	10	10	9	9	9	9	1'-0	1'-0	1'-0	10	10	9	9	9	9	U
W	5'-0	4'-9	4'-6	4'-3	4'-0	3'-9	3'-6	3'-6	3'-6	5'-0	4'-9	4'-6	4'-3	4'-0	3'-9	3'-6	3'-6	3'-6	W
B	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	9	9	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	B
C	1'-0	1'-0	1'-0	1'-0	1'-0	9	9	9	9	1'-0	1'-0	1'-0	1'-0	1'-0	9	9	9	1'-0	C
D	6	6	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	6	6	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	D
E	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	E

Dimension Table

S x H	8' x 10'	8' x 9'	8' x 8'	8' x 7'	8' x 6'	8' x 5'	8' x 4'	6' x 8'	6' x 7'	6' x 6'	6' x 5'	6' x 4'	6' x 3'	5' x 6'	5' x 5'	5' x 4'	5' x 3'	4' x 4'	3' x 3'	S x H
A	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	25'-0	22'-0	19'-0	16'-0	13'-0	10'-0	19'-0	16'-0	13'-0	10'-0	13'-0	10'-0	A
H	10'-0	9'-0	8'-0	7'-0	6'-0	5'-0	4'-0	8'-0	7'-0	6'-0	5'-0	4'-0	3'-0	6'-0	5'-0	4'-0	3'-0	4'-0	3'-0	H
P	31'-0	28'-0	25'-0	22'-0	19'-0	16'-0	13'-0	25'-0	22'-0	19'-0	16'-0	13'-0	10'-0	19'-0	16'-0	13'-0	10'-0	13'-0	10'-0	P
R	32'-8 1/2	29'-6 1/2	26'-4 1/2	23'-2 1/2	20'-0 1/2	16'-10 1/2	13'-8 1/2	26'-4 1/2	23'-2 1/2	20'-0 1/2	16'-10 1/2	13'-8 1/2	10'-6 1/2	20'-0 1/2	16'-10 1/2	13'-8 1/2	10'-6 1/2	13'-8 1/2	10'-6 1/2	R
S	8'-0	8'-0	8'-0	8'-0	8'-0	8'-0	8'-0	6'-0	6'-0	6'-0	6'-0	6'-0	6'-0	5'-0	5'-0	5'-0	5'-0	4'-0	3'-0	S
T	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	T
U	10	10	10	9	9	9	9	10	9	9	9	9	9	9	9	9	9	9	9	U
W	4'-6	4'-3	4'-0	3'-9	3'-6	3'-6	3'-6	4'-0	3'-9	3'-6	3'-6	3'-6	3'-6	3'-6	3'-6	3'-6	3'-6	3'-6	3'-6	W
B	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	B
C	1'-0	1'-0	9	9	9	9	1'-0	9	9	9	1'-0	1'-0	1'-0	9	1'-0	1'-0	1'-0	1'-0	1'-0	C
D	6	6	9	1'-0	1'-0	1'-0	1'-0	9	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	--	--	D
E	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	1'-0	E

Notes:

- See Sheet RCB G2-20 for General Notes, Specifications, and Design Stresses.
- See Sheets PWH 0-2-20 thru 0-4-20 for location of certain dimensions tabulated.
- Dimensions are in feet and inches unless otherwise noted.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWA DOT Highway Division

Standard Design - Single Reinforced Concrete Box Culverts

Parallel Wing Headwalls

July, 2020

Dimension Table
0° Skew

PWH 0-1-20

Section thru Parapet

Section thru Curtain Wall

Top of Wingwall Details

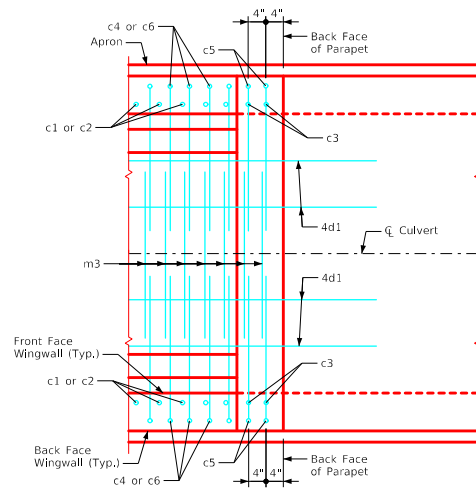
Typical Cross Section - thru Headwall

Curtain Wall
Class 20 Excavation

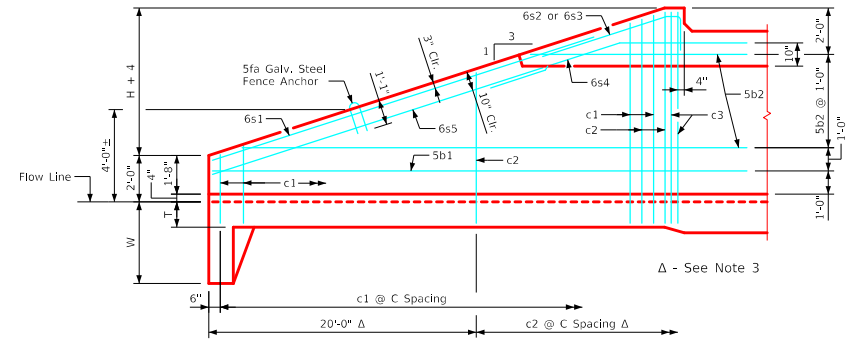
Curtain Wall Detail - Plan View
(Apron is not shown)

1. See Sheet RCB G2-20 for General Notes, Specifications, and Design Stresses.
2. For dimension table see Sheet PWH 0-1-20.

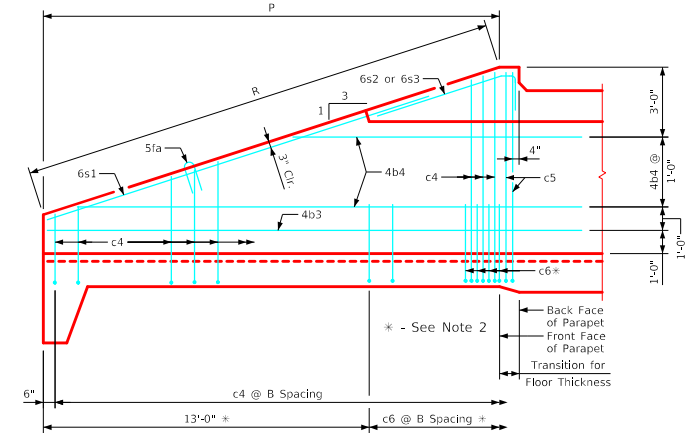
LATEST REVISION DATE 	 IOWA DOT Highway Division	
	Standard Design - Single Reinforced Concrete Box Culverts Parallel Wing Headwalls July, 2020	
APPROVED BY BRIDGE ENGINEER	Cross Section Details 0° Skew	PWH 0-2-20



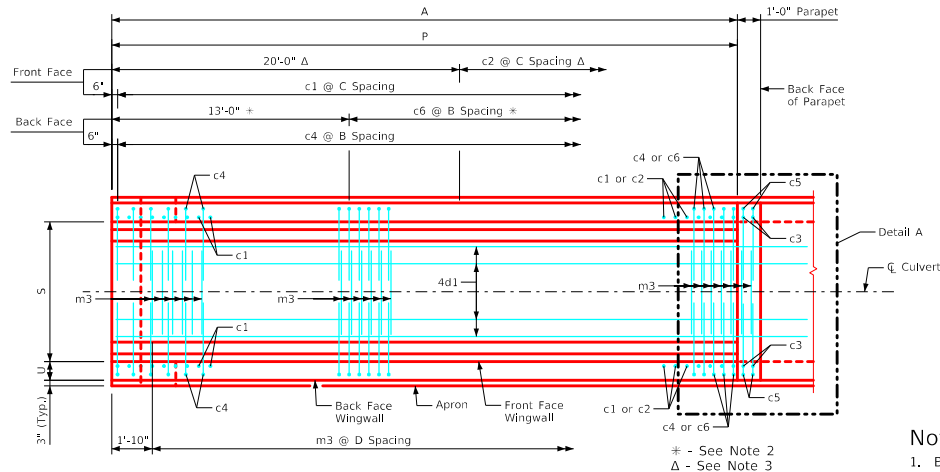
Detail A



Typical View - Front Face Wingwall Reinforcing



Typical View - Back Face Wingwall Reinforcing

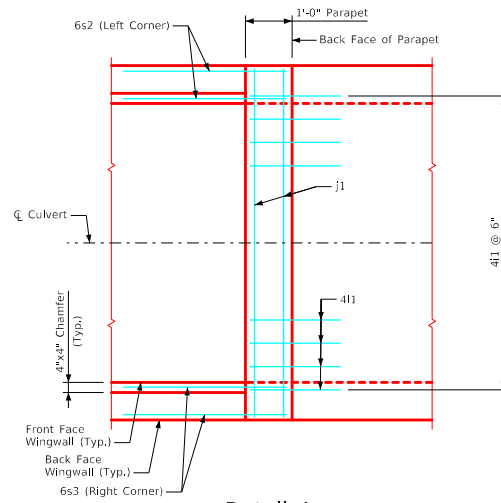


Plan View - Bottom Apron Reinforcing
(Curtain Wall Reinforcing not shown, See Sheet PWH 0-2-20)

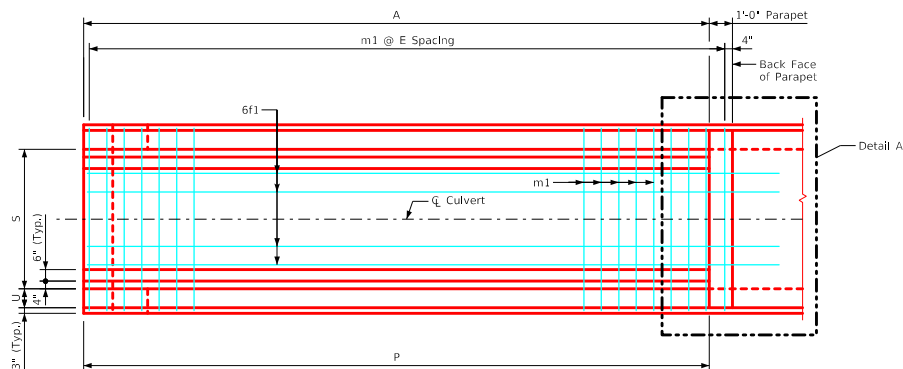
Notes:

1. Bar spacings and positions shown are similar for all sizes of headwalls in this standard.
2. Not applicable for 3' thru 5' height headwalls.
3. Not applicable for 3' thru 8' height headwalls.
4. For headwall dimensions and bar spacing see Sheet PWH 0-1-20.
5. Apron m3 bars are to be centered on $\bar{C}$ culvert.
6. B.F.V. (c5) and F.F.V. (c3) bars are approximately 4" from the back of parapet for all headwalls.

LATEST REVISION DATE			
		Standard Design - Single Reinforced Concrete Box Culverts	
		Parallel Wing Headwalls	
		July, 2020	
		Wingwall Elevations & Bottom Apron Reinforcing 0° Skew	PWH 0-3-20



Detail A
(Showing parapet bars only)

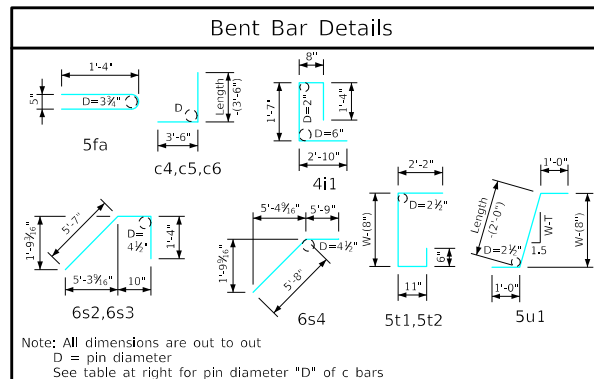


Plan View - Top Apron Reinforcing
(Wall Reinforcing not shown for clarity)

Notes:

1. Bar spacings and positions shown are similar for all sizes of headwalls in this standard.
2. For headwall dimensions and bar spacing see Sheet PWH 0-1-20.
3. Top transverse apron bars are referenced approximately 4" from the back of the parapet for all headwalls.

LATEST REVISION DATE			
		Standard Design - Single Reinforced Concrete Box Culverts	
		Parallel Wing Headwalls	
		July, 2020	
		Parapet Reinforcing & Top Apron Reinforcing 0° Skew	PWH 0-4-20



Headwall Notes:

- This headwall is based on a 3:1 slope normal to centerline of roadway.
- The sides of the apron are to be formed to ensure correct line and grade.
- All apron reinforcing steel is to be supported by bar chairs at intervals of not more than 3'-0" in either direction as outlined in the Standard Specifications.
- Clear distance from face of concrete to near reinforcing bar is to be 2" unless otherwise noted or shown. Clearance to the bottom ends of vertical bars shall be 3 inches.
- Concrete quantities are estimated from back of parapet.
- Horizontal tails of bars "b" & "s" estimated to extend 2'-5" beyond back of parapet (into end of barrel). Longitudinal bars "4d1" and "6f1" estimated to project into end section of barrel a minimum of 2'-5" beyond back of parapet. The "length" column reflects total number of feet necessary to meet these requirements.
- Dimensions are in feet and inches unless otherwise noted.

Bill of Reinforcing for One Headwall 0° Skew Span x Culvert Height																	
Location		Shape	10' x 6'				10' x 5'				10' x 4'						
			Bar	No.	Length	Wt.	Bar	No.	Length	Wt.	Bar	No.	Length	Wt.			
Fence Anchor (Galv.)			5fa	2	2'-10"	6	5fa	2	2'-10"	6	5fa	2	2'-10"	6			
Wingwall, F.F.H.			5b1	2	22'-3"	46	5b1	2	19'-3"	40	5b1	2	16'-3"	34			
Wingwall, F.F.H.			5b2	10 Var.	2 Each 8'-10 to 20'-10	155	5b2	8 Var.	2 Each 8'-10 to 17'-10	111	5b2	6 Var.	2 Each 8'-10 to 14'-10	74			
Wingwall, B.F.H.			4b3	2	22'-3"	30	4b3	2	19'-3"	26	4b3	2	16'-3"	22			
Wingwall, B.F.H.			4b4	8 Var.	2 Each 11'-10 to 20'-10	87	4b4	6 Var.	2 Each 11'-10 to 17'-10	59	4b4	4 Var.	2 Each 11'-10 to 14'-10	36			
Wingwall, F.F.V.			4c1	50 Var.	2 Each 2'-7 to 8'-7	186	4c1	32 Var.	2 Each 2'-7 to 7'-7	109	4c1	26 Var.	2 Each 2'-7 to 6'-7	80			
Wingwall, F.F.V.			c2	--	--	--	c2	--	--	--	c2	--	--	--			
Wingwall, F.F.V. (L)			4c3	2	9'-0"	12	4c3	2	8'-0"	11	4c3	2	7'-0"	9			
Wingwall, F.F.V. (R)			4c3	2	9'-0"	12	4c3	2	8'-0"	11	4c3	2	7'-0"	9			
Wingwall, B.F.V.			5c4	38 Var.	2 Each 6'-3 to 12'-3	367	5c4	32 Var.	2 Each 6'-3 to 11'-3	292	5c4	26 Var.	2 Each 6'-3 to 10'-3	224			
Wingwall, B.F.V. (L)			5c5	2	12'-6"	26	5c5	2	11'-6"	24	5c5	2	10'-6"	22			
Wingwall, B.F.V. (R)			5c5	2	12'-6"	26	5c5	2	11'-6"	24	5c5	2	10'-6"	22			
Wingwall, B.F.V.			5c6	14	8'-6"	124	c6	--	--	--	c6	--	--	--			
Apron, Longit., Bott.			4d1	11	22'-3"	163	4d1	11	19'-3"	141	4d1	11	16'-3"	119			
Apron, Longit., Top			6f1	11	22'-3"	368	6f1	11	19'-3"	318	6f1	11	16'-3"	268			
Parapet, Vertical			4i1	21	6'-5"	90	4i1	21	6'-5"	90	4i1	21	6'-5"	90			
Parapet, Horiz.			7j1	4	11'-2"	91	7j1	4	11'-2"	91	7j1	4	11'-2"	91			
Apron, Trans., Top			5m1	27	11'-8"	329	5m1	23	11'-8"	280	5m1	19	11'-8"	231			
Apron, Trans., Bott.			m2	--	--	--	m2	--	--	--	m2	--	--	--			
Curtain, Horiz.			4m3	19	7'-4"	93	4m3	16	7'-4"	78	4m3	13	7'-4"	64			
Wing Slope, Both F.			6p1	5	11'-8"	88	6p1	5	11'-8"	88	6p1	5	11'-8"	88			
Wing Slope, Both F. (L)			6s1	4	16'-9"	101	6s1	4	13'-7"	82	6s1	4	10'-5"	63			
Wing Slope, Both F. (R)			6s2	2	7'-9"	23	6s2	2	7'-9"	23	6s2	2	7'-9"	23			
Wing Slope, Both F. (R)			6s3	2	7'-9"	23	6s3	2	7'-9"	23	6s3	2	7'-9"	23			
Wing Slope, F.F.			6s4	2	11'-5"	34	6s4	2	11'-5"	34	6s4	2	11'-5"	34			
Wing Slope, F.F.			6s5	2	14'-2"	43	6s5	2	11'-0"	33	6s5	2	7'-10"	24			
Curtain, Vert.			5t1	11	6'-5"	74	5t1	11	6'-5"	74	5t1	11	6'-5"	74			
Curtain, Vert., Ends			5t2	4	6'-5"	27	5t2	4	6'-5"	27	5t2	4	6'-5"	27			
Bracket, Vert.			5u1	4	5'-4"	22	5u1	4	5'-4"	22	5u1	4	5'-4"	22			
Estimated Quantities One Headwall	Reinf. Steel		2646 LB				2117 LB				1779 LB						
	Concrete	Parapet Δ	1.4					1.4					1.4				
		Wingwalls	4.8	18.1 CY				3.5	15.2 CY				2.4	12.6 CY			
		Apron *	11.9					10.3					8.8				

Δ Includes top of wingwall quantities.

* Assumes apron and floor are equal thickness, adjust concrete quantities for transition where apron and floor thickness are not equal.

Note: Weight of bars over 40'-0" long include an allowance of 2'-5" for lap.

(L) - Indicates bar located at left corner.
(R) - Indicates bar located at right corner.
Refer to Sheet PWH 0-1-20 for left and right corner locations.

LATEST REVISION DATE APPROVED BY BRIDGE ENGINEER	 Standard Design - Single Reinforced Concrete Box Culverts Parallel Wing Headwalls July, 2020	
	Quantity Tabulation 10'-0" Span 0° Skew	PWH 0-8-20 SHEET 2 OF 2