Variable Dimensions and Quantities for Triple 12' x 8' Barrel Sections

	Dimensions												
Fill	S	H	A	B	C	D	E	R	T	U	W	X	Z
0	12	8	14	11.5	9	9	9	0'-2	0'-0	7'-7	2'-7	4'-5	4'-4
1	12	8	13	11	9	9	9	0'-10	0'-4	7'-7	2'-8	4'-5	4'-3
2	12	8	10	10	9	9	9	2'-4	1'-10	6'-3	3'-5	5'-2	4'-1
3-6	12	8	9	10.5	9	9	9	3'-8	2'-4	4'-10	3'-5	5'-2	4'-1
7-8	12	8	10	11.5	9	9	9	5'-2	2'-10	3'-11	3'-1	5'-2	3'-11
9-10	12	8	11	13	9	9	9	5'-2	2'-9	3'-10	2'-9	5'-2	3'-8
11-12	12	8	12	14	9	9	9	5'-2	2'-8	3'-10	2'-8	5'-2	3'-9
13-15	12	8	13.5	15.5	9	9	9	4'-1	2'-5	3'-10	2'-2	4'-2	3'-9
16-17	12	8	14.5	17	9	9	9	4'-0	1'-10	3'-10	1'-11	4'-0	3'-10
18-19	12	8	16	18	9	9	9	3'-10	1'-8	3'-11	1'-8	4'-9	3'-11
20-21	12	8	17	19	9.5	9	6	3'-8	1'-2	4'-0	1'-8	4'-10	4'-0
23-25	12	8	18	20	10	6	9	3'-8	1'-1	4'-1	1'-2	4'-4	4'-1
24-25	12	8	19	21.5	10	6	9	3'-8	1'-1	4'-1	1'-0	4'-2	4'-3

Bar List

	a1			a2			b1			b2			e1			e2		
Fill	Size	Sp.	L	Size	Sp.	L	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.
0	4	12	10'-0	6	9	10'-0	4	6	32	4	6	34	4	12	33	4	17	30
1	4	12	9'-11	6	9	9'-11	4	6	32	4	6	34	4	12	33	4	17	30
2	4	9	9'-7	6	9	9'-7	4	6	32	4	6	34	4	12	33	4	17	30
3-6	4	12	9'-6	6	9	9'-6	4	6	32	4	6	34	4	12	33	4	17	30
7-8	4	12	9'-8	6	9	9'-8	4	6	32	4	6	34	4	12	33	4	17	30
9-10	4	12	9'-11	6	9	9'-11	4	6	32	4	6	34	4	12	33	4	17	30
11-12	4	12	10'-1	6	9	10'-1	4	6	32	4	6	34	4	12	33	4	17	30
13-15	4	12	10'-4	6	9	10'-4	4	6	32	4	6	34	4	12	33	4	17	30
16-17	4	12	10'-6	6	9	10'-6	4	6	32	4	6	34	4	12	33	4	17	30
18-19	4	12	10'-9	6	9	10'-9	4	6	32	4	6	34	4	12	33	4	17	30
20-21	4	12	10'-11	5	6	10'-11	4	6	32	4	6	34	4	12	33	4	17	30
23-25	4	6	11'-1	7	9	11'-1	4	6	32	4	6	34	4	12	33	4	17	30
24-25	4	6	11'-3	7	9	11'-3	4	6	32	4	6	34	4	12	33	4	17	30

	f1			f2			k1			k2			k3		
Fill	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L
0	4	12	39	4	17	30	6	18	38'-8	6	18	12'-11	4	18	12'-5
1	4	12	39	4	17	30	5	12	38'-8	5	12	12'-7	4	12	11'-1
2	4	12	39	4	17	30	6	12	38'-8	5	12	10'-4	4	12	8'-1
3-6	4	12	39	4	17	30	4	6	38'-8	4	6	9'-1	4	9	5'-5
7-8	4	12	39	4	17	30	5	9	38'-8	4	9	8'-6	4	9	2'-5
9-10	4	12	39	4	17	30	5	9	38'-8	4	9	8'-10	4	9	2'-5
11-12	4	12	39	4	17	30	6	12	38'-8	5	12	9'-1	4	12	2'-5
13-15	4	12	39	4	17	30	6	12	38'-8	5	12	9'-9	4	12	4'-7
16-17	4	12	39	4	17	30	7	18	38'-8	7	18	11'-1	4	18	4'-9
18-19	4	12	39	4	17	30	7	18	38'-8	7	18	11'-3	4	18	5'-1
20-21	4	12	39	4	17	30	7	18	38'-10	7	18	11'-10	4	18	5'-6
23-25	4	12	39	4	17	30	5	9	39'-0	5	9	12'-0	4	9	5'-6
24-25	5	12	39	4	17	30	6	12	39'-0	6	12	12'-0	4	12	5'-6

	k4					k6			k7		
Fill	Size	Sp.	L	H	V	Size	Sp.	L	Size	Sp.	L
0	4	6	10'-2	7'-0	3'-2	5	18	38'-8	6	18	15'-2
1	6	12	9'-5	5'-6	3'-11	5	18	38'-8	6	18	15'-2
2	6	9	7'-10	4'-2	3'-8	5	18	38'-8	8	18	14'-3
3-6	5	6	6'-11	3'-9	3'-2	5	9	38'-8	5	9	10'-5
7-8	5	6	6'-6	3'-3	3'-3	5	9	38'-8	5	9	8'-3
9-10	5	6	6'-8	3'-4	3'-4	4	9	38'-8	6	9	8'-1
11-12	5	6	6'-10	3'-5	3'-5	5	12	38'-8	7	12	8'-2
13-15	5	6	6'-6	3'-0	3'-6	5	12	38'-8	7	12	8'-3
16-17	5	6	6'-8	3'-0	3'-8	5	9	38'-8	6	9	8'-3
18-19	5	6	6'-9	3'-0	3'-9	5	12	38'-8	7	12	8'-6
20-21	6	9	7'-4	3'-1	4'-3	5	12	38'-10	7	12	8'-8
23-25	6	12	7'-6	3'-2	4'-4	5	9	39'-0	6	9	8'-10
24-25	6	12	7'-8	3'-3	4'-5	5	9	39'-0	6	9	8'-10

Bar List

	k9			m1			m2			m3		
Fill	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L
0	6	4.5	38'-8	5	12	39'-2	5	12	8'-11	4	12	3'-11
1	6	4.5	38'-8	5	12	39'-2	5	12	8'-9	4	12	3'-11
2	8	4.5	38'-8	6	12	39'-2	5	12	7'-2	4	12	2'-5
3-6	5	4.5	38'-8	6	12	39'-2	5	12	7'-7	4	12	2'-5
7-8	5	4.5	38'-8	6	12	39'-2	5	12	8'-1	4	12	2'-5
9-10	6	4.5	38'-8	6	12	39'-2	5	12	9'-0	4	12	2'-5
11-12	7	4.5	38'-8	6	12	39'-2	5	12	9'-4	4	12	2'-5
13-15	7	4.5	38'-8	5	9	39'-2	5	9	10'-4	4	9	4'-5
16-17	6	4.5	38'-8	5	9	39'-2	5	9	11'-1	4	9	4'-9
18-19	7	4.5	38'-8	5	9	39'-2	5	9	11'-4	4	9	3'-3
20-21	7	4.5	38'-10	6	12	39'-4	6	12	11'-5	4	12	3'-2
22-23	6	4.5	39'-0	6	12	39'-6	6	12	11'-11	4	12	4'-2
24-25	6	4.5	39'-0	6	12	39'-6	6	12	12'-1	4	12	4'-6

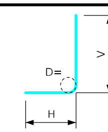
	m4					m6			m7			m9		
Fill	Size	Sp.	L	H	V	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L
0	5	6	14'-2	5'-9	8'-5	4	9	39'-2	5	9	8'-9	5	4.5	39'-2
1	7	12	13'-10	5'-6	8'-4	4	9	39'-2	5	9	8'-7	5	4.5	39'-2
2	6	9	12'-4	4'-1	8'-3	4	9	39'-2	6	9	8'-4	6	4.5	39'-2
3-6	5	6	12'-1	3'-9	8'-4	5	12	39'-2	7	12	8'-5	7	4.5	39'-2
7-8	5	6	11'-8	3'-3	8'-5	5	12	39'-2	7	12	8'-1	7	4.5	39'-2
9-10	5	6	11'-7	3'-1	8'-6	4	9	39'-2	6	9	7'-9	6	4.5	39'-2
11-12	5	6	11'-7	3'-0	8'-7	5	12	39'-2	7	12	8'-0	7	4.5	39'-2
13-15	5	6	11'-10	3'-1	8'-9	5	12	39'-2	7	12	8'-1	7	4.5	39'-2
16-17	5	6	11'-11	3'-1	8'-10	5	12	39'-2	7	12	8'-4	7	4.5	39'-2
18-19	5	6	12'-0	3'-1	8'-11	5	12	39'-2	7	12	8'-6	7	4.5	39'-2
20-21	6	9	12'-2	3'-2	9'-0	5	12	39'-4	7	12	8'-8	7	4.5	39'-4
22-23	6	12	12'-4	3'-3	9'-1	5	9	39'-6	6	9	8'-10	6	4.5	39'-6
24-25	6	12	12'-7	3'-4	9'-3	5	9	39'-6	6	9	9'-2	6	4.5	39'-6

Quantities

	Concrete (CY/FT)				Steel
Fill	Slab	Floor	Walls	Total	(LB/FT)
0	1.766	1.483	0.840	4.089	533.21
1	1.646	1.422	0.840	3.908	537.50
2	1.285	1.301	0.840	3.426	595.74
3-6	1.165	1.362	0.840	3.367	589.37
7-8	1.285	1.483	0.840	3.608	571.16
9-10	1.405	1.666	0.840	3.911	557.18
11-12	1.526	1.788	0.840	4.154	587.37
13-15	1.706	1.971	0.840	4.517	596.18
16-17	1.827	2.154	0.840	4.821	617.34
18-19	2.007	2.276	0.840	5.123	611.08
20-21	2.139	2.410	0.887	5.436	628.34
22-23	2.272	2.544	0.934	5.750	664.37
24-25	2.393	2.729	0.934	6.056	691.34

Bent Bar Detail

Bars	D
4	3"
5	3¾"
6	4½"
7	5¼"



k4 & m4

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

Notes:

1. Dimensions listed on this sheet to be used in conjunction with Sheet TRRCB G3-20.
2. Fill, dimensions "S" and "H" are in feet.
3. Dimensions "A", "B", "C", "D", and "Sp." listed in the bar list are in inches.
4. Dimensions "L", "H", "V" are in feet and inches.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

Standard Design
Triple Reinforced Concrete Box Culverts
July, 2020

Culvert Barrel Details
12' x 8' Barrel Sections

TRRCB 12-8-20
Sheet 2 of 2

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