Variable Dimensions and Quantities for Twin 10' x 11' Barrel Sections

Dimensions												Bar List					
												a1			a2		
Fill	S	H	A	B	C	D	E	U	W	X	Z	Size	Sp.	L	Size	Sp.	L
0	10	11	13	12	11	9	9	0'-1	6'-3	1'-9	6'-3	4	12	13'-0	7	9	13'-0
1	10	11	12.5	12	11	9	9	0'-10	6'-3	1'-11	6'-6	4	9	12'-11	7	9	12'-11
2	10	11	9	10.5	11	9	9	1'-3	6'-6	2'-10	4'-4	4	9	12'-6	7	9	12'-6
3	10	11	8	10	11	9	9	1'-8	4'-6	2'-2	3'-9	4	9	12'-5	7	9	12'-5
4	10	11	8	10	11	9	9	2'-2	3'-11	2'-3	3'-7	4	9	12'-5	7	9	12'-5
5-7	10	11	8	10	11	9	9	2'-3	3'-10	3'-2	3'-9	4	9	12'-5	7	9	12'-5
8-10	10	11	9	11.5	11	9	9	2'-3	3'-8	2'-1	3'-8	5	12	12'-7	7	9	12'-7
11-13	10	11	11	13.5	11	6	9	1'-11	3'-8	2'-1	3'-8	4	6	12'-11	7	9	12'-11
14-16	10	11	12.5	14.5	11.5	9	9	1'-9	3'-7	1'-10	3'-8	5	9	13'-2	7	9	13'-2
17-19	10	11	13.5	16	12.5	6	9	1'-8	3'-8	2'-2	3'-10	4	6	13'-4	7	9	13'-4
20-22	10	11	14.5	17	12.5	9	9	1'-5	3'-9	1'-11	3'-11	6	12	13'-6	7	9	13'-6
23-25	10	11	16	18	13	9	6	1'-8	3'-10	1'-8	4'-0	6	9	13'-9	6	6	13'-9

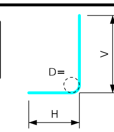
Bar List																		
	b1			b2			e1			e2			f1			f2		
Fill	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.
0	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
1	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
2	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
3	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
4	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
5-7	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
8-10	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
11-13	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
14-16	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
17-19	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
20-22	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16
23-25	4	6	44	4	6	23	4	12	18	4	18	16	4	12	22	4	18	16

Bar List																						
	k1			k2			k4					k6			k7			k9		
Fill	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	H	V	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L
0	6	18	22'-5	5	18	11'-1	6	9	10'-6	6'-7	3'-11	4	12	22'-5	4	12	12'-6	4	4.5	22'-5
1	6	18	22'-5	5	18	10'-4	6	9	10'-6	6'-7	3'-11	4	12	22'-5	4	12	12'-6	4	4.5	22'-5
2	5	12	22'-5	5	12	9'-9	6	9	10'-3	6'-8	3'-7	5	12	22'-5	5	12	13'-0	5	4.5	22'-5
3	5	12	22'-5	5	12	8'-4	6	9	8'-6	5'-0	3'-6	5	12	22'-5	5	12	9'-0	5	4.5	22'-5
4	5	12	22'-5	5	12	7'-6	6	9	8'-2	4'-8	3'-6	5	12	22'-5	5	12	7'-10	5	4.5	22'-5
5-7	5	12	22'-5	5	12	7'-5	5	6	7'-4	4'-3	3'-1	5	12	22'-5	6	12	7'-8	6	4.5	22'-5
8-10	5	12	22'-5	5	12	7'-7	6	9	7'-8	4'-1	3'-7	4	12	22'-5	7	12	7'-4	7	4.5	22'-5
11-13	6	18	22'-5	6	18	8'-5	6	9	8'-2	4'-1	4'-1	4	12	22'-5	7	12	7'-4	7	4.5	22'-5
14-16	6	18	22'-6	6	18	9'-0	6	9	8'-2	4'-1	4'-1	5	9	22'-6	5	9	7'-2	5	4.5	22'-6
17-19	5	12	22'-9	5	12	9'-2	5	6	7'-8	4'-1	3'-7	4	9	22'-9	6	9	7'-4	6	4.5	22'-9
20-22	5	12	22'-9	5	12	9'-10	5	6	8'-2	4'-1	4'-1	5	12	22'-9	7	12	7'-6	7	4.5	22'-9
23-25	5	9	22'-11	4	9	9'-5	6	9	8'-4	4'-2	4'-2	5	12	22'-11	7	12	7'-8	7	4.5	22'-11

	Bar List																			Quantities				
	m1			m2			m4					m6			m7			m9			Concrete (CY/FT)			Steel (LB/FT)
Fill	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	H	V	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Slab	Floor	Walls	Total	
0	6	18	22'-11	6	18	8'-10	6	9	18'-0	6'-7	11'-5	4	9	22'-11	4	9	12'-6	4	4.5	22'-11	0.978	0.924	1.080	2.982	404.26
1	4	9	22'-11	4	9	8'-5	6	9	18'-1	6'-8	11'-5	4	12	22'-11	5	12	13'-0	5	4.5	22'-11	0.943	0.924	1.080	2.947	399.61
2	5	9	22'-11	4	9	6'-5	6	9	16'-5	5'-1	11'-4	4	12	22'-11	6	12	8'-8	6	4.5	22'-11	0.697	0.816	1.080	2.593	418.13
3	5	12	22'-11	5	12	7'-8	6	9	15'-10	4'-7	11'-3	4	9	22'-11	5	9	7'-6	5	4.5	22'-11	0.627	0.780	1.080	2.487	399.26
4	5	12	22'-11	5	12	7'-7	6	9	15'-7	4'-4	11'-3	4	9	22'-11	5	9	7'-2	5	4.5	22'-11	0.627	0.780	1.080	2.487	393.39
5-7	5	9	22'-11	4	9	5'-8	5	6	15'-4	4'-1	11'-3	4	12	22'-11	7	12	7'-6	7	4.5	22'-11	0.627	0.780	1.080	2.487	398.58
8-10	5	12	22'-11	5	12	8'-2	6	9	15'-6	4'-1	11'-5	4	12	22'-11	7	12	7'-4	7	4.5	22'-11	0.697	0.888	1.080	2.665	400.39
11-13	5	12	22'-11	5	12	8'-4	6	9	15'-9	4'-2	11'-7	4	12	22'-11	7	12	7'-4	7	4.5	22'-11	0.837	1.032	1.080	2.949	413.79
14-16	5	12	23'-0	5	12	9'-1	6	9	15'-9	4'-1	11'-8	4	9	23'-0	6	9	7'-4	6	4.5	23'-0	0.950	1.111	1.129	3.190	431.55
17-19	5	9	23'-3	4	9	8'-6	5	6	15'-11	4'-2	11'-9	5	12	23'-3	7	12	7'-8	7	4.5	23'-3	1.035	1.234	1.227	3.496	436.42
20-22	5	9	23'-3	4	9	9'-0	5	6	16'-0	4'-2	11'-10	5	12	23'-3	7	12	7'-10	7	4.5	23'-3	1.106	1.307	1.227	3.640	453.21
23-25	5	9	23'-5	4	9	9'-6	6	9	16'-0	4'-1	11'-11	5	9	23'-5	6	9	8'-0	6	4.5	23'-5	1.221	1.388	1.275	3.884	483.53

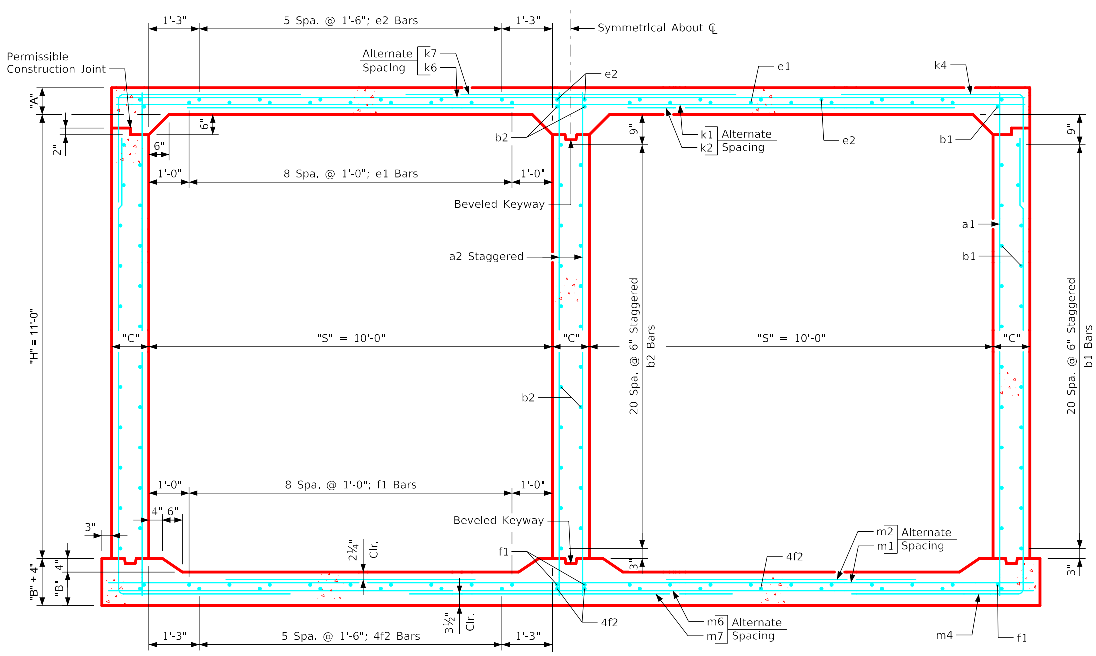
Bent Bar Detail

Bars	D
5	3¾"
6	4½"



k4 & m4

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



Twin 10' x 11' Barrel Section

Notes:

1. Dimensions listed on this sheet to be used in conjunction with Sheet TWRCB 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
Twin Reinforced Concrete Box Culverts
July, 2020

Culvert Barrel Details
10' x 11' Barrel Sections

TWRCB 10-11-20

ENGLISHLRFDSIGNEDTWINCULVERTS.DGN - TWRCB 10-11-20 - THIS SHEET ISSUED 07-2020.