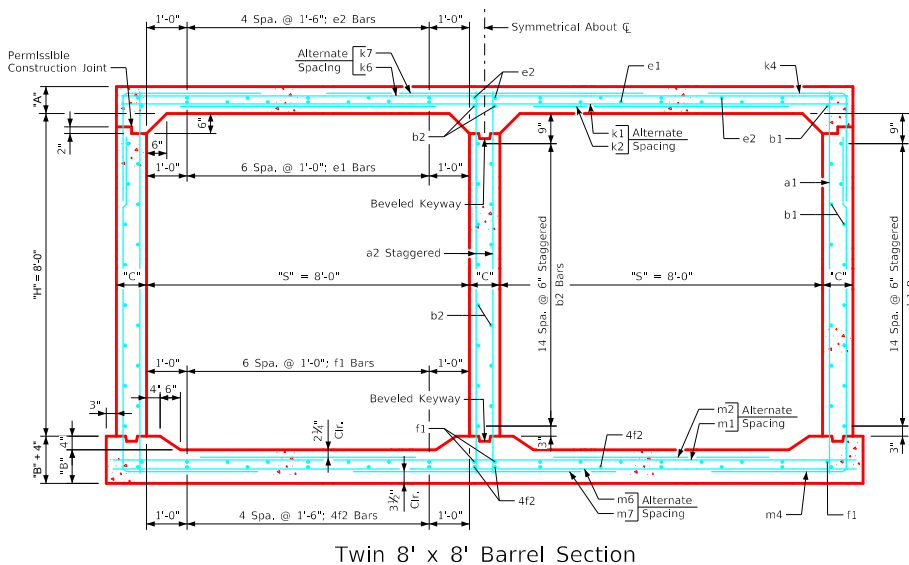
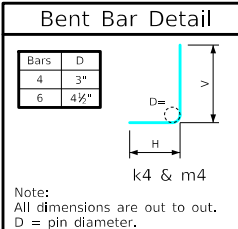


Variable Dimensions and Quantities for Twin 8' x 8' Barrel Sections

Dimensions													Bar List																																																
Fill	S	H	A	B	C	D	E	U	W	X	Z	a1			a2			b1			b2			e1			e2			f1			k1			k2			k4			k6			k7			k9													
												Size	Sp.	L	Size	Sp.	L	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.	Size	Sp.	NO.											
0	8	8	13	10.5	9	9	9	0'-0	5'-2	1'-11	5'-7	5	12	9'-10	6	9	9'-10	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	4	12	18	4	18	14	4	12	17'-11	5	18	8'-11	4	6	8'-6	5'-5	3'-1	4	12	17'-11	4	12	10'-4	4	4.5	17'-11
1	8	8	11.5	10.5	9	9	9	0'-0	5'-5	1'-11	5'-5	4	9	9'-9	6	9	9'-9	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	4	12	17'-11	4	12	8'-11	4	6	8'-2	5'-2	3'-0	4	18	17'-11	5	18	10'-10	5	4.5	17'-11						
2	8	8	8	10	9	9	9	1'-0	5'-7	1'-7	4'-2	5	12	9'-5	6	9	9'-5	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	4	9	17'-11	4	9	7'-7	4	6	7'-9	5'-0	2'-9	5	18	17'-11	6	18	11'-2	6	4.5	17'-11						
3	8	8	8	10	9	9	9	1'-6	4'-0	2'-5	3'-6	4	12	9'-5	6	9	9'-5	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	6	18	17'-11	5	18	6'-6	4	6	6'-6	3'-9	2'-9	4	12	17'-11	4	12	8'-0	4	4.5	17'-11						
4	8	8	8	10	9	9	9	1'-6	3'-5	2'-6	3'-3	4	12	9'-5	6	9	9'-5	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	4	12	17'-11	4	12	6'-9	4	6	6'-2	3'-5	2'-9	4	12	17'-11	4	12	6'-10	4	4.5	17'-11						
5-7	8	8	8	10	9	9	9	1'-7	3'-3	2'-6	3'-0	4	12	9'-5	6	9	9'-5	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	4	12	17'-11	4	12	6'-7	4	6	6'-0	3'-3	2'-9	4	12	17'-11	5	12	6'-6	5	4.5	17'-11						
8-10	8	8	8	10	9	9	9	2'-1	2'-11	2'-4	3'-0	4	9	9'-5	6	9	9'-5	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	6	18	17'-11	5	18	5'-7	4	6	5'-10	2'-11	2'-11	5	12	17'-11	5	12	5'-10	5	4.5	17'-11						
11-13	8	8	8.5	11	9	9	9	2'-0	2'-10	2'-1	2'-11	5	12	9'-6	6	9	9'-6	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	5	12	17'-11	4	12	5'-9	4	6	5'-8	2'-10	2'-10	4	9	17'-11	5	9	5'-8	5	4.5	17'-11						
14-16	8	8	9.5	12	9	6	9	1'-9	3'-0	1'-7	3'-3	4	6	9'-8	6	9	9'-8	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	5	12	17'-11	4	12	6'-4	4	6	5'-8	2'-10	2'-10	5	12	17'-11	6	12	6'-0	6	4.5	17'-11						
17-19	8	8	10.5	12.5	9	6	9	1'-10	2'-11	1'-6	3'-0	4	6	9'-10	6	9	9'-10	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	5	12	17'-11	4	12	6'-5	4	6	5'-10	2'-11	2'-11	5	12	17'-11	6	12	5'-10	6	4.5	17'-11						
20-22	8	8	12	14.5	9	6	9	1'-4	3'-0	1'-6	3'-3	4	6	10'-1	6	9	10'-1	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	6	18	17'-11	5	18	7'-4	4	6	6'-0	3'-0	3'-0	5	12	17'-11	6	12	6'-0	6	4.5	17'-11						
23-25	8	8	13.5	15.5	9.5	6	6	1'-2	3'-2	1'-1	3'-3	4	6	10'-4	5	6	10'-4	4	6	32	4	6	17	4	12	14	4	18	14	4	12	18	4	18	14	6	18	18'-0	5	18	7'-10	6	12	6'-10	2'-11	3'-11	5	18	18'-0	8	18	6'-4	8	4.5	18'-0						

Fill	Bar List																											Quantities			
	m1			m2			m4			m6			m7			m9			Concrete (CY/FT)			Steel (LB/FT)									
Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Slab	Floor	Walls	Total	(LB/FT)
0	5	12	18'-5	4	12	6'-2	4	6	13'-4	5'-0	8'-4	5	18	18'-5	6	18	11'-2	6	4.5	18'-5	0.789	0.667	0.632	2.088	272.29						
1	5	12	18'-5	4	12	5'-10	4	6	13'-6	5'-2	8'-4	5	18	18'-5	5	18	10'-10	5	4.5	18'-5	0.705	0.667	0.632	2.004	259.05						
2	4	9	18'-5	4	9	6'-8	4	6	12'-11	4'-8	8'-3	5	18	18'-5	6	18	8'-4	6	4.5	18'-5	0.507	0.638	0.632	1.777	274.32						
3	5	12	18'-5	4	12	5'-3	4	6	11'-9	3'-6	8'-3	4	18	18'-5	6	18	7'-0	6	4.5	18'-5	0.507	0.638	0.632	1.777	245.58						
4	5	12	18'-5	4	12	4'-9	4	6	11'-7	3'-4	8'-3	4	18	18'-5	6	18	6'-6	6	4.5	18'-5	0.507	0.638	0.632	1.777	234.74						
5-7	5	12	18'-5	4	12	4'-9	4	6	11'-5	3'-2	8'-3	4	12	18'-5	5	12	6'-0	5	4.5	18'-5	0.507	0.638	0.632	1.777	239.16						
8-10	5	12	18'-5	4	12	3'-2	4	6	11'-2	2'-11	8'-3	4	12	18'-5	6	12	6'-0	6	4.5	18'-5	0.507	0.638	0.632	1.777	258.55						
11-13	5	12	18'-5	4	12	6'-0	4	6	11'-3	2'-11	8'-4	4	9	18'-5	5	9	5'-10	5	4.5	18'-5	0.536	0.696	0.632	1.864	263.68						
14-16	4	9	18'-5	4	9	6'-10	4	6	11'-4	2'-11	8'-5	5	18	18'-5	8	18	6'-6	8	4.5	18'-5	0.592	0.753	0.632	1.977	278.71						
17-19	4	9	18'-5	4	9	7'-3	4	6	11'-3	2'-9	8'-6	5	12	18'-5	6	12	6'-0	6	4.5	18'-5	0.648	0.782	0.632	2.062	281.63						
20-22	5	12	18'-5	4	12	7'-5	4	6	11'-7	2'-11	8'-8	5	18	18'-5	8	18	6'-6	8	4.5	18'-5	0.733	0.898	0.632	2.263	285.68						
23-25	4	9	18'-6	4	9	8'-0	6	12	11'-9	3'-0	8'-9	5	18	18'-6	8	18	6'-6	8	4.5	18'-6	0.824	0.964	0.667	2.455	300.18						



- Notes:**
- Dimensions listed on this sheet to be used in conjunction with Sheet TWRCB G3-20.
 - 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	APPROVED BY BRIDGE ENGINEER	IOWADOT Highway Division	TWRCB 8-8-20
		Standard Design Twin Reinforced Concrete Box Culverts July, 2020	
		Culvert Barrel Details 8' x 8' Barrel Sections	

ENGLISHLRFDDESIGNEDTWINCULVERTS.DGN - TWRCB 8-8-20 - THIS SHEET ISSUED 07-2020.