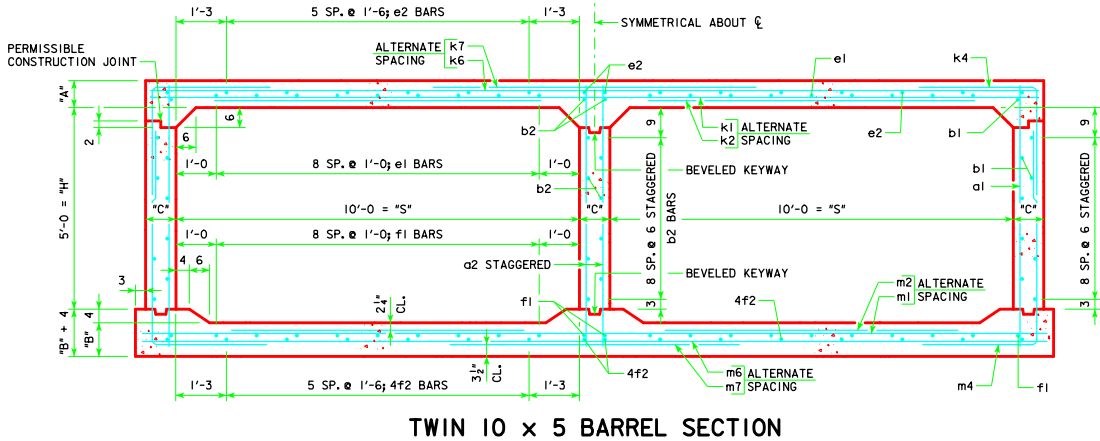
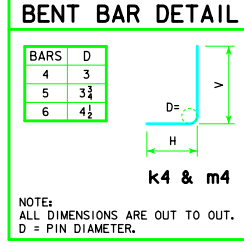


ENGLISH BEDSIGNED IN CIVILVERTS.DGN - TWRCB_10-5-12 - THIS SHEET ISSUED 04-12


VARIABLE DIMENSIONS AND QUANTITIES FOR TWIN 10 x 5 BARREL SECTIONS

DIMENSIONS																	BAR LIST																																						
FILL	S	H	A	B	C	D	E	U	W	X	Z	a1		a2		b1		b2		e1		e2		f1		f2		k1		k2		k4		k6		k7		k9																	
0	10	5	13	11	9	9	9	0'-0	6'-3	2'-1	6'-3	4	12	6'-11	6	9	6'-11	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	6	18	21'-11	6	18	10'-11	5	9	6'-6	3'-3	3'-3	4	9	21'-11	4	9	12'-6	4	4.5	21'-11
1	10	5	12.5	11	9	9	9	0'-5	6'-3	2'-2	4'-11	4	12	6'-10	6	9	6'-10	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	6	18	21'-11	6	18	10'-6	5	9	6'-6	3'-3	3'-3	4	9	21'-11	4	9	12'-6	4	4.5	21'-11
2	10	5	9.5	10	9	9	9	0'-10	5'-10	2'-0	4'-3	4	12	6'-6	6	9	6'-6	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	6	18	10'-11	5	6	6'-0	3'-0	3'-0	5	18	21'-11	7	18	11'-8	7	4.5	21'-11			
3	10	5	9	10	9	9	9	1'-5	4'-11	2'-0	3'-10	4	12	6'-6	6	9	6'-6	4	6	20	4	6	11	4	12	18	4	18	16	5	12	21'-11	5	12	9'-1	5	6	5'-10	2'-11	2'-11	4	12	21'-11	6	12	9'-10	6	4.5	21'-11						
4	10	5	8	10	9	6	9	1'-10	4'-0	2'-4	3'-7	4	6	6'-5	6	9	6'-5	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	5	12	21'-11	5	12	8'-1	5	6	5'-10	2'-11	2'-11	4	9	21'-11	5	9	8'-0	5	4.5	21'-11
5-7	10	5	8	10	9	6	9	2'-0	3'-10	2'-5	3'-9	4	6	6'-5	6	9	6'-5	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	5	12	21'-11	5	12	7'-8	5	9	5'-8	2'-10	2'-10	5	12	21'-11	6	12	7'-8	6	4.5	21'-11
8-10	10	5	9	11	9	6	9	2'-0	3'-6	2'-3	3'-5	4	6	6'-7	6	9	6'-7	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	5	12	21'-11	5	12	7'-9	6	9	5'-0	2'-9	3'-3	5	9	21'-11	5	9	7'-0	5	4.5	21'-11
11-13	10	5	11	13	9	9	9	1'-10	3'-7	2'-1	3'-7	4	9	6'-11	6	9	6'-11	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	6	18	21'-11	6	18	8'-8	4	6	5'-5	2'-4	3'-1	4	9	21'-11	6	9	7'-2	6	4.5	21'-11
14-16	10	5	12.5	14.5	9	9	9	1'-7	3'-8	1'-9	3'-8	4	12	7'-2	6	9	7'-2	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	6	18	21'-11	6	18	9'-4	6	12	5'-9	2'-3	3'-6	5	12	21'-11	7	12	7'-4	7	4.5	21'-11
17-19	10	5	14	16	9	9	9	1'-7	3'-9	1'-8	3'-10	4	12	7'-5	6	9	7'-5	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	5	12	21'-11	5	12	9'-4	6	12	5'-11	2'-3	3'-8	5	12	21'-11	7	12	7'-6	7	4.5	21'-11
20-22	10	5	15	16.5	9	9	9	1'-3	3'-10	1'-11	3'-10	4	12	7'-6	6	9	7'-6	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	5	12	21'-11	5	12	9'-8	6	12	6'-1	2'-4	3'-9	5	9	21'-11	6	9	7'-8	6	4.5	21'-11
23-25	10	5	16	18	9	9	9	1'-6	3'-10	1'-7	4'-0	4	12	7'-9	6	9	7'-9	4	6	20	4	6	11	4	12	18	4	18	16	4	12	22	4	18	16	5	12	21'-11	4	9	9'-5	4	6	5'-0	2'-4	3'-6	5	9	21'-11	6	9	7'-8	6	4.5	21'-11

FILL	BAR LIST											QUANTITIES																					
	SIZE	SP.	L	SIZE	SP.	L	SIZE	SP.	L	H	V	SIZE	SP.	L	SIZE	SP.	L	SIZE	SP.	L	SLAB	FLOOR	WALLS	TOTAL	STEEL								
0	4	9	22'-5	4	9	7'-10	6	9	11'-9	6'-5	5'-4	4	9	22'-5	4	9	12'-6	4	4.5	22'-5	0.950	0.831	0.382	2.163	302.18								
1	4	9	22'-5	4	9	7'-9	6	9	9'-10	4'-6	5'-4	4	9	22'-5	4	9	9'-10	4	4.5	22'-5	0.915	0.831	0.382	2.128	290.68								
2	5	12	22'-5	5	12	7'-8	5	6	8'-3	3'-0	5'-3	4	12	22'-5	6	12	8'-6	6	4.5	22'-5	0.709	0.761	0.382	1.852	300.18								
3	5	12	22'-5	5	12	7'-9	5	6	8'-2	2'-11	5'-3	4	9	22'-5	5	9	7'-8	5	4.5	22'-5	0.675	0.761	0.382	1.818	296.24								
4	5	12	22'-5	5	12	7'-3	4	6	8'-1	2'-10	5'-3	4	9	22'-5	5	9	7'-2	5	4.5	22'-5	0.606	0.761	0.382	1.749	288.13								
5-7	5	12	22'-5	5	12	7'-3	5	9	8'-0	2'-9	5'-3	4	12	22'-5	7	12	7'-6	7	4.5	22'-5	0.606	0.761	0.382	1.749	288.03								
8-10	5	12	22'-5	5	12	7'-7	5	9	7'-10	2'-6	5'-4	5	9	22'-5	5	9	6'-10	5	4.5	22'-5	0.675	0.831	0.382	1.888	309.89								
11-13	5	12	22'-5	5	12	8'-3	4	6	7'-10	2'-4	5'-6	5	9	22'-5	5	9	7'-2	5	4.5	22'-5	0.812	0.972	0.382	2.166	291.61								
14-16	5	12	22'-5	5	12	9'-1	6	12	7'-11	2'-3	5'-8	5	12	22'-5	7	12	7'-4	7	4.5	22'-5	0.915	1.077	0.382	2.374	305.79								
17-19	5	12	22'-5	5	12	9'-4	6	12	8'-1	2'-4	5'-9	5	12	22'-5	7	12	7'-8	7	4.5	22'-5	1.018	1.182	0.382	2.582	309.45								
20-22	5	9	22'-5	4	9	9'-0	6	12	8'-2	2'-4	5'-10	5	9	22'-5	6	12	6'-1	2'-4	3'-9	5	9	21'-11	6	9	7'-8	6	4.5	21'-11	1.087	1.218	0.382	2.687	327.16
23-25	5	9	22'-5	4	9	9'-5	4	6	8'-3	2'-4	5'-11	5	9	22'-5	6	9	8'-0	6	4.5	22'-5	1.156	1.323	0.382	2.861	325.32								



- NOTES:**
- DIMENSIONS LISTED ON THIS SHEET TO BE USED IN CONJUNCTION WITH SHEET TWRCB G2-12.
 - DIMENSIONS "A", "B", "C", "D", "E", AND "SP." LISTED IN THE BAR LIST ARE IN INCHES.

LATEST REVISION DATE	APPROVED BY BRIDGE ENGINEER <i>Thomas E. McQuinn</i>	 Iowa Department of Transportation <i>Highway Division</i>
		STANDARD DESIGN TWIN REINFORCED CONCRETE BOX CULVERTS APRIL, 2012
CULVERT BARREL DETAILS		TWRCB 10-5-12
10 x 5 BARREL SECTIONS		