VARIABLE DIMENSIONS AND QUANTITIES FOR TRIPLE 12 x 8 BARREL SECTIONS

REINFORCING BAR LIST

FILL	4a1			a2			4b1			4b2			5e1			4e2			5e3			4e4			4f1			4f2			4f3			4f4			k1			k2			k3			k4					k5				
	SIZE	SP	LENGTH	SIZE	SP	LENGTH	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.	SIZE	SP	LENGTH	SIZE	SP	LENGTH	SIZE	SP	LENGTH	h	v	SIZE	SP	LENGTH	h	v
0	4	9	9'-8	5	4.5	9'-8	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	4	9	38'-8	5	9	10'-10	5	9	10'-2	4	9	4'-5	1'-9	2'-8	5	9	4'-7	1'-11	2'-8
1	4	9	9'-10	5	6	9'-10	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	4	9	38'-8	5	9	10'-7	5	9	9'-8	4	9	4'-8	2'-0	2'-8	5	9	4'-6	1'-10	2'-8
2	4	9	9'-6	5	4.5	9'-6	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	6	12	38'-8	6	12	9'-1	5	12	7'-6	4	9	4'-10	2'-2	2'-8	5	9	4'-7	1'-11	2'-8
3-6	4	9	9'-5	5	4.5	9'-5	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	5	12	38'-8	6	12	8'-10	5	12	7'-5	4	9	4'-11	2'-3	2'-8	5	9	4'-8	2'-0	2'-8
7-8	4	9	9'-5	4	4.5	9'-5	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	5	12	38'-8	6	12	8'-3	5	12	6'-8	5	12	4'-11	2'-4	2'-7	6	12	4'-6	1'-11	2'-7
9-10	4	9	9'-8	4	4.5	9'-8	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	5	12	38'-8	6	12	8'-6	4	12	5'-5	5	12	4'-8	2'-1	2'-7	6	12	4'-6	1'-11	2'-7
11-12	4	6	9'-10	4	4.5	9'-10	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	5	9	38'-8	5	9	7'-9	4	9	4'-1	5	12	4'-10	2'-3	2'-7	6	12	4'-5	1'-10	2'-7
13-15	4	6	10'-0	4	4.5	10'-0	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	6	12	38'-8	6	12	8'-2	4	12	4'-0	5	12	4'-10	2'-3	2'-7	6	12	4'-5	1'-10	2'-7
16-17	4	6	10'-2	4	4.5	10'-2	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	7	15	38'-8	7	15	8'-6	4	12	4'-0	5	12	4'-11	2'-4	2'-7	6	12	4'-4	1'-9	2'-7
18-19	4	9	10'-5	4	4.5	10'-5	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	7	15	38'-8	7	15	8'-8	4	15	4'-0	5	9	5'-8	3'-0	2'-8	5	9	4'-6	1'-10	2'-8
20-21	4	9	10'-7	4	4.5	10'-7	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	7	15	38'-8	7	15	8'-8	4	15	4'-0	5	9	6'-7	3'-11	2'-8	5	9	5'-0	2'-4	2'-8
22-23	4	9	10'-9	5	6	10'-9	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	7	15	38'-8	7	15	8'-9	4	15	4'-0	5	9	5'-11	3'-3	2'-8	5	9	5'-0	2'-4	2'-8
24-25	4	9	10'-11	5	4.5	10'-11	4	9	22	4	9	24	5	12	22	4	17	20	5	12	11	4	17	10	4	12	26	4	17	20	4	12	13	4	17	10	7	15	38'-8	7	15	9'-0	4	15	4'-0	5	9	6'-5	3'-4	3'-1	6	9	5'-9	2'-8	3'-1

REINFORCING BAR LIST

FILL	k6			k7			k9			m1			m2			m3			m4					m5					m6			m7			m9		
	SIZE	SP	LENGTH	SIZE	SP	LENGTH	SIZE	SP	LENGTH	SIZE	SP	LENGTH	SIZE	SP	LENGTH	SIZE	SP	LENGTH	SIZE	SP	LENGTH	h	v	SIZE	SP	LENGTH	h	v	SIZE	SP	LENGTH	SIZE	SP	LENGTH	SIZE	SP	LENGTH
0	4	9	38'-8	4	9	5'-4	4	4.5	38'-8	4	9	39'-2	4	9	7'-0	4	9	6'-1	4	9	11'-0	1'-10	9'-2	5	9	11'-0	1'-10	9'-2	4	9	39'-2	5	9	4'-7	4	4.5	39'-2
1	5	12	32'-6	5	12	5'-5	5	4.5	38'-8	4	9	39'-2	4	9	7'-2	4	9	6'-1	4	9	11'-4	2'-0	9'-4	5	9	11'-2	1'-10	9'-4	4	9	30'-2	5	9	4'-8	4	4.5	39'-2
2	6	12	31'-9	6	12	5'-7	6	4.5	38'-8	5	9	39'-2	5	9	7'-2	—	—	—	5	9	11'-2	2'-2	9'-0	5	9	10'-10	1'-10	9'-0	6	12	30'-5	7	12	5'-1	6	4.5	39'-2
3-6	5	9	30'-3	5	9	5'-0	5	4.5	38'-8	4	9	39'-2	5	9	8'-0	4	9	5'-8	4	9	10'-11	2'-0	8'-11	5	9	10'-9	1'-10	8'-11	5	9	29'-10	5	9	4'-1	5	4.5	39'-2
7-8	6	12	29'-9	7	12	5'-6	6	4.5	38'-8	5	9	39'-2	5	9	7'-4	4	9	4'-5	5	12	11'-1	2'-2	8'-11	6	12	10'-8	1'-9	8'-11	6	12	29'-11	7	12	5'-4	6	4.5	39'-2
9-10	5	9	29'-6	6	9	5'-3	5	4.5	38'-8	5	9	39'-2	5	9	7'-7	4	9	4'-5	5	12	11'-2	2'-0	9'-2	6	12	10'-11	1'-9	9'-2	6	12	29'-10	7	12	5'-4	6	4.5	39'-2
11-12	6	12	29'-7	7	12	5'-6	6	4.5	38'-8	6	12	39'-2	6	12	8'-0	4	12	4'-0	5	12	11'-7	2'-3	9'-4	6	12	11'-1	1'-9	9'-4	6	9	29'-8	6	9	4'-6	6	4.5	39'-2
13-15	6	9	29'-5	6	9	4'-9	6	4.5	38'-8	7	15	39'-2	7	15	8'-6	4	15	4'-0	5	12	11'-10	2'-4	9'-6	6	12	11'-3	1'-9	9'-6	6	9	29'-7	6	9	4'-7	6	4.5	39'-2
16-17	6	9	29'-4	6	9	4'-8	6	4.5	38'-8	7	15	39'-2	7	15	8'-7	4	15	4'-0	5	12	12'-7	2'-11	9'-8	6	12	11'-5	1'-9	9'-8	7	15	29'-11	8	15	5'-8	7	7.5	39'-2
18-19	7	15	29'-8	8	15	5'-9	7	7.5	38'-8	7	15	39'-2	7	15	8'-7	4	15	4'-0	5	9	12'-11	3'-0	9'-11	5	9	11'-9	1'-10	9'-11	7	15	29'-11	8	15	5'-9	7	7.5	39'-2
20-21	7	15	29'-8	8	15	6'-9	7	7.5	38'-8	5	9	39'-2	6	9	9'-1	4	9	4'-8	5	9	13'-2	3'-1	10'-1	5	9	11'-11	1'-10	10'-1	7	15	29'-10	8	15	5'-9	7	7.5	39'-2
22-23	6	9	29'-6	6	9	5'-1	6	4.5	38'-8	7	15	39'-2	7	15	8'-10	4	15	4'-0	5	9	13'-6	3'-3	10'-3	5	9	12'-1	1'-10	10'-3	7	15	29'-10	8	15	5'-10	7	7.5	39'-2
24-25	6	9	29'-7	6	9	5'-4	6	4.5	38'-8	5	9	39'-2	6	9	9'-7	4	9	5'-1	5	9	13'-9	3'-4	10'-5	6	9	12'-6	2'-1	10'-5	7	15	29'-11	8	15	5'-11	7	7.5	39'-2

DIMENSIONS

FILL	S	H	A	B	C	*D	*E	*F	*G	*J
0	12	8	11	10.5	9	9	4.5	4.5	12	12
1	12	8	11.5	11.5	9	9	4.5	4.5	12	12
2	12	8	9.5	10	9	9	4.5	4.5	12	12
3-6	12	8	8	10	9	9	4.5	4.5	12	12
7-8	12	8	8	10.5	9	9	4.5	9	12	12
9-10	12	8	9.5	11.5	9	9	4.5	9	12	12
11-12	12	8	10.5	12.5	9	9	4.5	9	12	12
13-15	12	8	11.5	14	9	9	4.5	9	12	12
16-17	12	8	12.5	15	9	9	7.5	9	12	18
18-19	12	8	14	16	9	9	7.5	4.5	18	18
20-21	12	8	15	17	9	9	7.5	4.5	18	18
22-23	12	8	16	18.5	9	9	7.5	4.5	12	18
24-25	12	8	17	19.5	9	9	7.5	4.5	12	18

DIMENSIONS

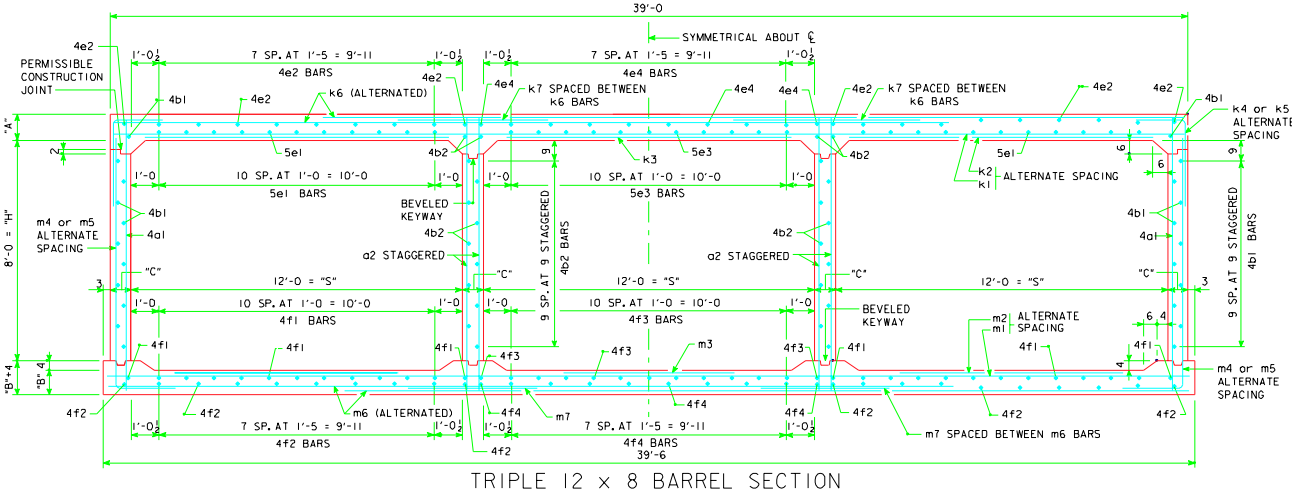
FILL	*K	*L	R	T	U	V	W	X	Y	Z
0	4.5	3	1'-4	1'-6	2'-8	——	3'-5	3'-4	——	2'-4
1	4.5	3	1'-6	1'-8	2'-9	6'-10	3'-5	3'-4	4'-3	2'-4
2	4.5	3	2'-8	2'-5	2'-10	6'-1	3'-4	——	4'-6	2'-7
3-6	4.5	3	2'-8	2'-5	2'-6	4'-7	2'-11	3'-7	3'-11	2'-1
7-8	4.5	3	3'-0	2'-9	2'-9	4'-1	3'-4	4'-2	4'-0	2'-8
9-10	4.5	3	3'-8	2'-10	2'-8	3'-10	3'-3	4'-2	3'-11	2'-8
11-12	4.5	3	4'-4	3'-3	2'-9	3'-11	3'-2	4'-5	3'-9	2'-3
13-15	7.5	3	4'-4	3'-1	2'-5	3'-9	3'-0	4'-5	3'-8	2'-4
16-17	7.5	3	4'-5	3'-0	2'-4	3'-8	3'-0	4'-5	4'-0	2'-10
18-19	7.5	3	4'-5	2'-11	2'-11	4'-0	3'-0	4'-5	4'-0	2'-11
20-21	4.5	3	4'-5	3'-0	3'-5	4'-0	2'-9	4'-0	3'-11	2'-11
22-23	7.5	3	4'-5	3'-0	2'-7	3'-10	2'-11	4'-5	3'-11	2'-11
24-25	4.5	3	4'-5	2'-10	2'-8	3'-11	2'-7	3'-10	4'-0	3'-0

BENT BAR DETAILS

BARS	D
4	3
5	3¾
6	4½
7	5¼

m4, m5
k4, k5

NOTE: ALL DIMENSIONS ARE OUT TO OUT D = PIN DIAMETER



TRIPLE 12 x 8 BARREL SECTION

* THESE DIMENSIONS ARE CORRECT FOR 38'-0 LONG STANDARD SECTIONS ONLY. DIMENSIONS MUST BE RECALCULATED FOR ALL OTHER SECTION LENGTHS.

QUANTITIES

FILL	CONCRETE CU YD/FT				STEEL
	SLAB	FLOOR	WALL	TOTAL	LBS/FT
0	1.407	1.359	0.842	3.608	495.79
1	1.467	1.481	0.842	3.790	479.18
2	1.226	1.298	0.842	3.366	592.32
3-6	1.046	1.298	0.842	3.186	520.87
7-8	1.046	1.359	0.842	3.247	552.66
9-10	1.226	1.481	0.842	3.549	545.37
11-12	1.347	1.603	0.842	3.792	590.53
13-15	1.467	1.786	0.842	4.095	619.82
16-17	1.587	1.907	0.842	4.336	626.87
18-19	1.768	2.029	0.842	4.639	631.21
20-21	1.888	2.151	0.842	4.881	639.16
22-23	2.009	2.334	0.842	5.185	650.84
24-25	2.129	2.456	0.842	5.427	695.53

DIMENSIONS LISTED ON THIS SHEET TO BE USED IN CONJUNCTION WITH SHEET TRRCB 2-01.

LATEST REVISION DATE :

APPROVED BY :

STANDARD DESIGN

CULVERT BARREL DETAILS

FOR

TRIPLE REINFORCED CONCRETE BOX CULVERTS

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

SEPT., 2001

TRRCB 12-8-01

TRB128.SOI - 09-01 THIS SHEET ISSUED.

XXXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDGNSPEC