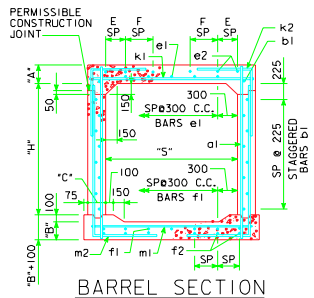
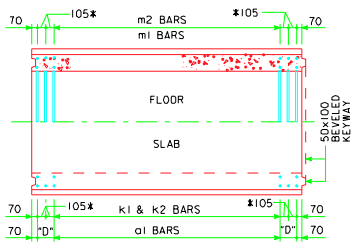
VARIABLE DIMENSIONS AND QUANTITIES FOR BARREL SECTIONS

DIMENSIONS							DIMENSIONS																																	QUANTITIES				
							a1			b1			e1			e2				f1			f2			k1			m1			k2					m2					CONCRETE m³/m				STEEL
																SPACING																													
FILL	S	H	A	B	‡	*D	SIZE	SP	L	SIZE	SP	NO.	SIZE	SP	NO.	SIZE	E	F	NO.	SIZE	SP	NO.	SIZE	SP	NO.	SIZE	SP	L	SIZE	SP	L	SIZE	SP	L	h	v	SIZE	SP	L	h	v	SLAB	FLOOR	WALLS	TOTAL	kg/m
0	3600	3000	270	295	255	140	15	140	3540	15	225	28	15	300	11	15	360	360	11	15	300	13	15	360	8	25	280	4010	15	182	4160	15	105	3030	2340	690	15	105	4830	1400	3430	1.196	1.348	1.476	4.020	521.6
300	3600	3000	295	305	255	140	15	140	3570	15	225	28	15	300	11	15	410	410	6	15	300	13	15	330	8	25	280	4010	20	210	4160	15	105	1940	1250	690	15	105	4760	1300	3460	1.299	1.390	1.476	4.165	491.5
600	3600	3000	245	270	255	210	15	210	3490	15	225	28	15	300	11	15	410	410	6	15	300	13	15	410	6	25	182	4010	15	105	4160	25	210	2170	1150	1020	25	210	4600	1220	3380	1.093	1.241	1.476	3.811	567.1
900-2100	3600	3000	205	255	255	210	15	210	3430	15	225	28	15	300	11	15	380	380	6	15	300	13	15	380	6	15	105	4010	25	210	4160	25	210	2090	1070	1020	25	210	4400	1070	3330	0.929	1.177	1.476	3.582	545.1
2400-3000	3600	3000	230	295	255	140	15	140	3500	15	225	28	15	300	11	15	330	330	6	15	300	13	15	330	6	25	182	4010	20	105	4160	15	105	1790	970	820	15	105	4350	970	3380	1.032	1.348	1.476	3.856	543.3
3300-3900	3600	3000	245	305	255	210	15	280	3520	15	225	28	15	300	11	15	330	330	6	15	300	13	15	330	6	25	210	4010	20	105	4160	25	182	1990	970	1020	25	182	4350	940	3410	1.093	1.390	1.476	3.960	593.0
4200-4800	3600	3000	280	345	255	140	15	140	3600	15	225	28	15	300	11	15	300	300	6	15	300	13	15	280	6	20	105	4010	25	140	4160	25	182	1910	890	1020	25	182	4350	870	3480	1.237	1.561	1.476	4.274	666.4
5100-6000	3600	3000	330	395	255	210	15	280	3700	15	225	28	15	300	11	15	410	-	4	15	300	13	15	410	4	25	182	4010	25	140	4160	20	105	1760	820	940	20	105	4430	840	3590	1.443	1.774	1.476	4.693	619.9
6300-7500	3600	3000	380	455	255	210	25	280	3810	15	225	28	15	300	11	15	300	300	6	15	300	13	15	410	4	25	140	4010	25	140	4160	25	140	1940	920	1020	25	140	4550	840	3710	1.648	2.029	1.476	5.154	806.2
0	3600	3600	270	295	305	210	15	280	4140	15	225	32	15	300	11	15	360	360	11	15	300	13	15	380	8	20	182	4110	15	182	4260	15	140	3080	2390	690	15	140	5540	1500	4040	1.235	1.387	2.130	4.753	452.7
300	3600	3600	295	320	305	350	15	350	4190	15	225	32	15	300	11	15	410	410	8	15	300	13	15	360	8	20	182	4110	15	105	4260	20	182	2500	1710	790	20	182	5520	1430	4090	1.341	1.496	2.130	4.967	482.5
600	3600	3600	245	270	305	210	15	210	4090	15	225	32	15	300	11	15	360	360	8	15	300	13	15	360	8	20	140	4110	25	210	4260	25	280	2710	1430	1280	25	280	5390	1400	3990	1.130	1.278	2.130	4.538	570.3
900-2100	3600	3600	205	270	305	350	15	350	4050	15	225	32	15	300	11	15	410	410	6	15	300	13	15	410	6	25	210	4110	25	182	4260	15	105	1970	1150	820	15	105	5090	1150	3940	0.962	1.278	2.130	4.370	528.1
2400-3000	3600	3600	230	295	305	140	15	140	4100	15	225	32	15	300	11	15	380	380	6	15	300	13	15	380	6	15	105	4110	25	210	4260	15	105	1940	1120	820	15	105	5090	1100	3990	1.067	1.387	2.130	4.584	551.7
3300-3900	3600	3600	245	320	305	140	15	140	4140	15	225	32	15	300	11	15	380	380	6	15	300	13	15	360	6	25	182	4110	20	105	4260	20	140	1890	1100	790	20	140	5110	1070	4040	1.130	1.496	2.130	4.756	623.7
4200-4800	3600	3600	280	355	305	182	15	182	4210	15	225	32	15	300	11	15	360	360	6	15	300	13	15	330	6	25	210	4110	20	105	4260	25	182	2070	1050	1020	25	182	5140	1020	4120	1.278	1.649	2.130	5.056	674.6
5100-6000	3600	3600	330	405	305	140	15	140	4310	15	225	32	15	300	11	15	330	330	6	15	300	13	15	330	6	20	105	4110	25	140	4260	20	105	1940	1000	940	20	105	5220	1000	4220	1.488	1.867	2.130	5.485	735.5
6300-7500	3600	3600	395	455	305	140	15	140	4420	15	225	32	15	300	11	15	330	330	6	15	300	13	15	330	6	25	182	4110	25	140	4260	25	140	2020	1000	1020	25	140	5340	1020	4320	1.762	2.085	2.130	5.976	835.0

* THESE DIMENSIONS ARE CORRECT FOR 11 480 mm LONG STANDARD SECTIONS ONLY. DIMENSIONS MUST BE RECALCULATED FOR ALL OTHER SECTION LENGTHS.

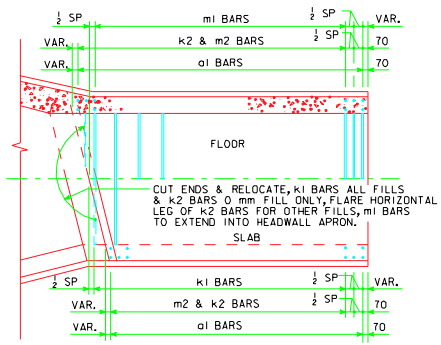


BARREL SECTION



STANDARD SECTION PLAN VIEW

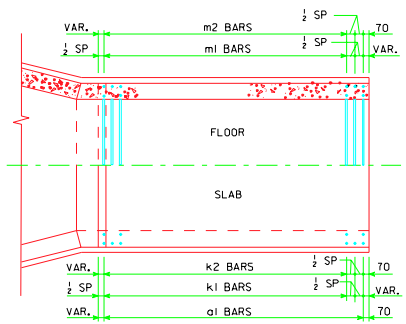
NOTE:
TYPICAL FOR LENGTHS OF 11 480 mm.
(KEYWAY IS TO BE OMITTED WHEN BELL JOINTS ARE USED)



PLAN - SKEW TYPICAL

(KEYWAY NOT SHOWN)

NOTE:
ALL LONGITUDINAL BARREL STEEL SHALL EXTEND AT LEAST TO THE BACKFACE OF PARAPET.

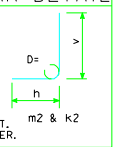


PLAN - 0° SKEW

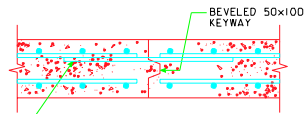
(KEYWAY NOT SHOWN)

BENT BAR DETAIL

BARS	D
15	100
20	120
25	150
30	240



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



ONE SET OF SIZE 15 r1x1050 mm DOWEL BARS @ 300 mm SPACING REQUIRED IN SLAB AT ALL CULVERT BARREL JOINTS, EXCEPT JOINTS WITH BELL JOINTS.
r1 BARS REQUIRED = 13, TOTAL MASS = 22 kg.

TOP SLAB CONSTRUCTION JOINT DETAIL

NOTES:

1. SEE SHEET MRCB-G1-95 FOR GENERAL INFORMATION, SPECIFICATIONS, AND DESIGN STRESSES.

LATEST REVISION DATE :

APPROVED BY : William A. Kendzierski

STANDARD DESIGN

CULVERT BARREL DETAILS

FOR

REINFORCED CONCRETE BOX CULVERTS

PROJECT DEVELOPMENT DIVISION
IOWA DEPARTMENT OF TRANSPORTATION

JULY, 1995

MRCB-3600-2-95

RCB36M2.SOI

XXXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXXX