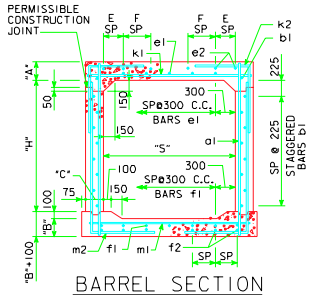
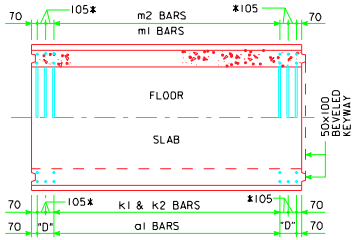
VARIABLE DIMENSIONS AND QUANTITIES FOR BARREL SECTIONS

DIMENSIONS							DIMENSIONS																																				QUANTITIES				
							a1			b1			e1			e2			f1			f2			k1			m1			k2					m2				CONCRETE m³/m				STEEL
																SPACING																														
FILL	S	H	A	B	C	*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	2400	1200	270	255	230	140	15	140	1700	15	225	12	15	300	7	15	400	400	7	15	300	9	15	380	6	20	210	2760	15	140	2910	20	280	2570	1780	790	20	280	2600	1050	1550	0.852	0.854	0.505	2.210	260.6
300	2400	1200	280	255	230	140	15	140	1710	15	225	12	15	300	7	15	410	-	4	15	300	9	15	360	6	20	210	2760	15	140	2910	20	280	1530	740	790	20	280	2580	1000	1580	0.881	0.854	0.505	2.239	237.0
600	2400	1200	205	255	230	140	15	140	1630	15	225	12	15	300	7	15	410	-	4	15	300	9	15	410	4	20	182	2760	15	182	2910	15	182	1480	790	690	15	182	2290	790	1500	0.666	0.854	0.505	2.024	222.3
900-2100	2400	1200	205	255	230	210	15	210	1630	15	225	12	15	300	7	15	410	-	4	15	300	9	15	410	4	15	140	2760	15	182	2910	15	182	1380	690	690	15	182	2190	690	1500	0.666	0.854	0.505	2.024	201.3
2400-3000	2400	1200	205	255	230	210	15	210	1630	15	225	12	15	300	7	15	380	-	4	15	300	9	15	410	4	15	182	2760	15	182	2910	15	105	1330	640	690	15	105	2170	670	1500	0.666	0.854	0.505	2.024	235.4
3300-3900	2400	1200	205	255	230	140	15	140	1630	15	225	12	15	300	7	15	410	-	4	15	300	9	15	410	4	20	210	2760	15	140	2910	15	182	1360	670	690	15	182	2190	690	1500	0.666	0.854	0.505	2.024	221.0
4200-4800	2400	1200	205	255	230	140	15	140	1630	15	225	12	15	300	7	15	380	-	4	15	300	9	15	410	4	20	182	2760	25	210	2910	15	105	1330	640	690	15	105	2170	670	1500	0.666	0.854	0.505	2.024	290.5
5100-6000	2400	1200	230	280	230	140	15	140	1680	15	225	12	15	300	7	15	360	-	4	15	300	9	15	380	4	25	210	2760	20	140	2910	15	105	1300	610	690	15	105	2190	640	1550	0.738	0.929	0.505	2.171	301.2
6300-7500	2400	1200	270	320	230	180	15	180	1760	15	225	12	15	300	7	15	360	-	4	15	300	9	15	360	4	20	140	2760	25	182	2910	20	182	1400	610	790	20	182	2240	610	1630	0.852	1.049	0.505	2.406	295.6
0	2400	1500	270	255	230	140	15	140	2000	15	225	14	15	300	7	15	400	400	7	15	300	9	15	380	6	20	210	2760	15	140	2910	20	280	2570	1780	790	20	280	2880	1020	1860	0.852	0.854	0.643	2.348	275.5
300	2400	1500	280	255	230	140	15	140	2010	15	225	14	15	300	7	15	410	-	4	15	300	9	15	360	6	20	210	2760	15	140	2910	20	280	1530	740	790	20	280	2880	1000	1880	0.881	0.854	0.643	2.377	252.3
600	2400	1500	205	255	230	210	15	210	1930	15	225	14	15	300	7	15	410	-	4	15	300	9	15	410	4	20	182	2760	15	182	2910	15	105	1460	770	690	15	105	2580	770	1810	0.666	0.854	0.643	2.162	271.4
900-2100	2400	1500	205	255	230	210	15	210	1930	15	225	14	15	300	7	15	410	-	4	15	300	9	15	410	4	15	140	2760	15	182	2910	15	182	1380	690	690	15	182	2500	690	1810	0.666	0.854	0.643	2.162	214.4
2400-3000	2400	1500	205	255	230	210	15	210	1930	15	225	14	15	300	7	15	380	-	4	15	300	9	15	410	4	15	182	2760	15	105	2910	15	105	1330	640	690	15	105	2480	670	1810	0.666	0.854	0.643	2.162	269.7
3300-3900	2400	1500	205	255	230	140	15	140	1930	15	225	14	15	300	7	15	410	-	4	15	300	9	15	410	4	20	210	2760	20	182	2910	15	182	1360	670	690	15	182	2480	670	1810	0.666	0.854	0.643	2.162	241.8
4200-4800	2400	1500	205	255	230	140	15	140	1930	15	225	14	15	300	7	15	380	-	4	15	300	9	15	380	4	20	182	2760	25	210	2910	15	105	1330	640	690	15	105	2450	640	1810	0.666	0.854	0.643	2.162	308.7
5100-6000	2400	1500	230	280	230	140	15	140	1980	15	225	14	15	300	7	15	360	-	4	15	300	9	15	360	4	25	210	2760	20	140	2910	15	105	1300	610	690	15	105	2470	610	1860	0.738	0.929	0.643	2.309	319.4
6300-7500	2400	1500	270	320	230	140	15	140	2060	15	225	14	15	300	7	15	360	-	4	15	300	9	15	360	4	25	182	2760	25	210	2910	20	182	1400	610	790	20	182	2550	610	1940	0.852	1.049	0.643	2.544	328.8
0	2400	1800	270	255	230	140	15	140	2300	15	225	16	15	300	7	15	400	400	7	15	300	9	15	380	6	20	210	2760	15	140	2910	20	280	2570	1780	790	20	280	3210	1050	2160	0.852	0.854	0.781	2.486	291.3
300	2400	1800	280	255	230	140	15	140	2310	15	225	16	15	300	7	15	410	-	4	15	300	9	15	360	6	20	210	2760	15	210	2910	20	280	1560	770	790	20	280	3190	1000	2190	0.881	0.854	0.781	2.515	258.0
600	2400	1800	205	255	230	210	15	210	2230	15	225	16	15	300	7	15	410	-	4	15	300	9	15	410	4	20	182	2760	15	105	2910	15	105	1460	770	690	15	105	2900	790	2110	0.666	0.854	0.781	2.300	306.0
900-2100	2400	1800	205	255	230	210	15	210	2230	15	225	16	15	300	7	15	410	-	4	15	300	9	15	410	4	15	140	2760	15	182	2910	15	105	1380	690	690	15	105	2800	690	2110	0.666	0.854	0.781	2.300	277.7
2400-3000	2400	1800	205	255	230	210	15	210	2230	15	225	16	15	300	7	15	410	-	4	15	300	9	15	410	4	15	182	2760	15	105	2910	15	105	1360	670	690	15	105	2800	690	2110	0.666	0.854	0.781	2.300	287.7
3300-3900	2400	1800	205	255	230	140	15	140	2230	15	225	16	15	300	7	15	410	-	4	15	300	9	15	410	4	20	210	2760	20	182	2910	15	182	1360	670	690	15	182	2800	690	2110	0.666	0.854	0.781	2.300	257.3
4200-4800	2400	1800	205	255	230	140	15	140	2230	15	225	16	15	300	7	15	380	-	4	15	300	9	15	410	4	25	210	2760	15	105	2910	15	105	1330	640	690	15	105	2780	670	2110	0.666	0.854	0.781	2.300	332.0
5100-6000	2400	1800	230	280	230	140	15	140	2280	15	225	16	15	300	7	15	360	-	4	15	300	9	15	380	4	15	105	2760	25	182	2910	15	105	1300	610	690	15	105	2800	640	2160	0.738	0.929	0.781	2.447	341.5
6300-7500	2400	1800	270	320	230	180	15	180	2370	15	225	16	15	300	7	15	360	-	4	15	300	9	15	360	4	25	182	2760	25	182	2910	20	182	1400	610	790	20	182	2850	610	2240	0.852	1.079	0.781	2.712	343.1

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

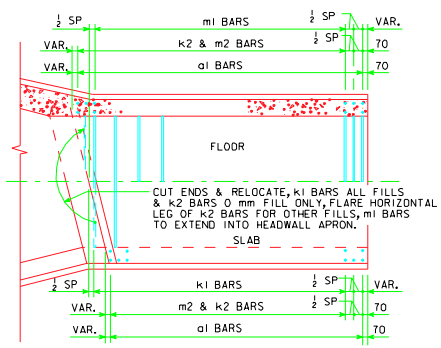


BARREL SECTION



STANDARD SECTION PLAN VIEW

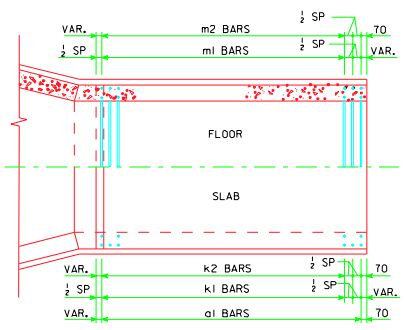
NOTE:
TYPICAL FOR LENGTHS OF H 480 mm.
(KEYWAY IS TO BE OMITTED WHEN BELL JOINTS ARE USED)



PLAN - SKEW TYPICAL

(KEYWAY NOT SHOWN)

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

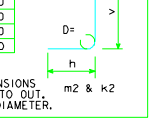


PLAN - 0° SKEW

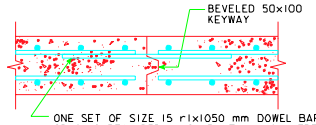
(KEYWAY NOT SHOWN)

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 = 9, TOTAL MASS = 15 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 :

STANDARD DESIGN

CULVERT BARREL DETAILS

FOR

REINFORCED CONCRETE BOX CULVERTS

PROJECT DEVELOPMENT DIVISION
IOWA DEPARTMENT OF TRANSPORTATION

JULY, 1995

MRCB-2400-1-95

RCB24M1.S01

XXXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXXX