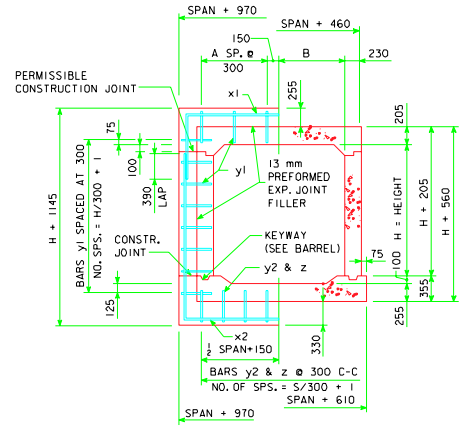
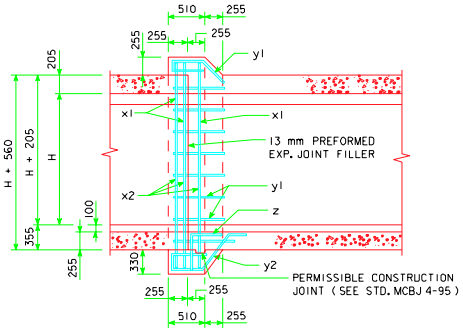
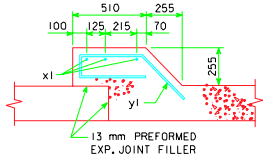


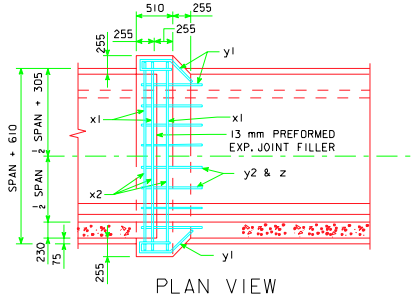
JOINT DETAIL SECTION THRU BARREL



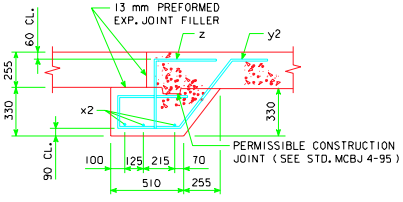
LONGITUDINAL SECTION



TOP & SIDES - BARS y1



PLAN VIEW



BOTTOM BARS - y2 & z

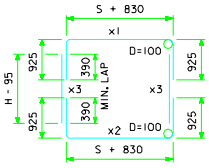
ESTIMATE OF QUANTITIES - ONE JOINT - 900, 1200 & 1500 SPAN

BILL OF REINFORCING STEEL			900x900				1200x1200				1500x900				1500x1200				1500x1500				1500x1800			
MARK	LOCATION	SHAPE	SIZE	NO.	LENGTH	MASS	SIZE	NO.	LENGTH	MASS	SIZE	NO.	LENGTH	MASS	SIZE	NO.	LENGTH	MASS	SIZE	NO.	LENGTH	MASS	SIZE	NO.	LENGTH	MASS
x1	SLAB AND WALLS		15	3	3580	17	15	3	3880	19	15	3	4180	20	15	3	4180	20	15	3	4180	20	15	3	4180	20
x2	FLOOR AND WALLS		15	3	4450	21	15	3	5350	25	15	3	5050	24	15	3	5650	27	15	3	4180	20	15	3	4180	20
x3	WALLS		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	15	6	1405	13	15	6	1705	16
y1	TOP AND SIDES		15	14	1480	33	15	18	1480	42	15	16	1480	37	15	18	1480	42	15	20	1480	47	15	22	1480	51
y2	BOTTOM		15	5	1880	15	15	6	1880	18	15	7	1880	21	15	7	1880	21	15	7	1880	21	15	7	1880	21
z	BOTTOM & FLOOR		15	5	870	7	15	6	870	8	15	7	870	10	15	7	870	10	15	7	870	10	15	7	870	10
TOTAL MASS kg						93				112				112				120				131				138
TOTAL CONCRETE m^3						1.2				1.4				1.4				1.5				1.6				1.7

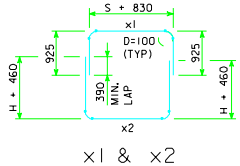
SPACING AND DIMENSION TABLE

SPAN	A	B
900	1	450
1200	2	600
1500	2	750

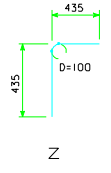
BENT BAR DETAILS



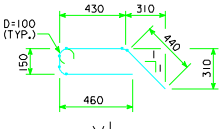
x1, x2 & x3



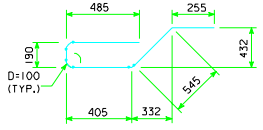
x1 & x2



z



y1



y2

CONCRETE PLACEMENT m^3

SIZE	FOOTING	WALLS	SLAB
900X900	0.502	0.260	0.398
1200X1200	0.565	0.358	0.447
1500X900	0.628	0.260	0.495
1500X1200	0.628	0.358	0.495
1500X1500	0.628	0.455	0.495
1500X1800	0.628	0.553	0.495

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

NOTES:

1. DIMENSIONS AND QUANTITIES SHOWN BASED ON SLAB THICKNESSS OF 205 mm WALL= 230 mm, AND FLOOR = 255 mm.
2. CHANGE LENGTHS OF BARS x1, x2, z AND ADJUST REINFORCING STEEL AND CONCRETE QUANTITIES ACCORDINGLY FOR SLAB, WALL, AND FLOOR THICKNESSES OTHER THAN SHOWN.
3. ALL BAR LENGTHS ARE ESTIMATED WITH A 50 mm CLEARANCE FROM CONCRETE EDGE TO OUTSIDE OF BAR, EXCEPT AS NOTED.
4. MATERIAL AND CONSTRUCTION TO BE IN ACCORDANCE WITH CURRENT STANDARD SPECIFICATIONS OF I.D.O.T..
5. SEE SHEET MRCB-GI-95 FOR GENERAL INFORMATION, SPECIFICATIONS, AND DESIGN STRESSES.
6. BARREL FLOOR BARS m1 ARE TO BE SHORTENED 150 mm AT BELL JOINTS.

LATEST REVISION DATE : 04-02

APPROVED BY : William A. Kendrick

STANDARD DESIGN

CULVERT BELL JOINTS

FOR
REINFORCED CONCRETE BOX CULVERTS
900 mm, 1200 mm & 1500 mm SPANS

PROJECT DEVELOPMENT DIVISION
IOWA DEPARTMENT OF TRANSPORTATION

JULY, 1995

MCBJ 1-95

REVISED 04-02 - ADDED PERMISSIBLE CULVERT BELL JOINT.
CBJIM.SOI

XXXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDGNSPEC