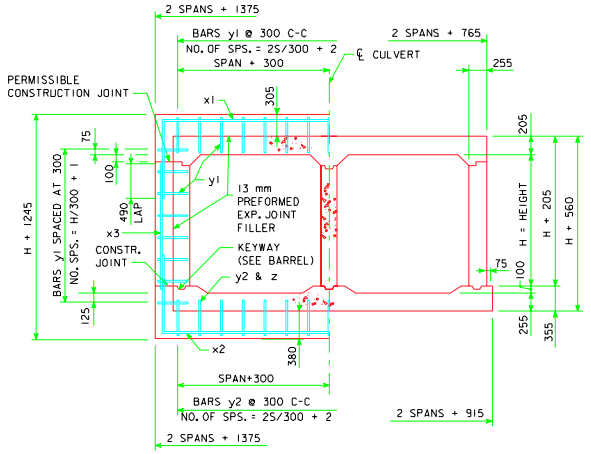


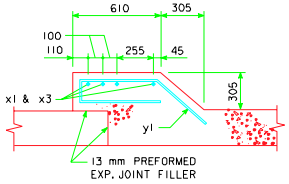
JOINT DETAIL
SECTION THRU BARREL

CONCRETE PLACEMENT m^3

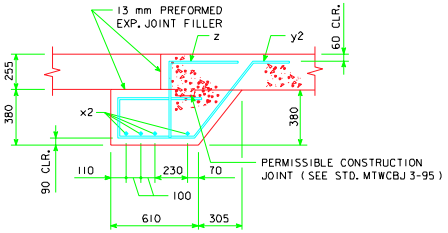
SIZE	FOOTING	WALLS	SLAB
2400X1800	2.120	0.791	1.711
2400x2400	2.120	1.070	1.711
2400x3000	2.120	1.349	1.711

ESTIMATE OF QUANTITIES - ONE JOINT - 2400 SPAN

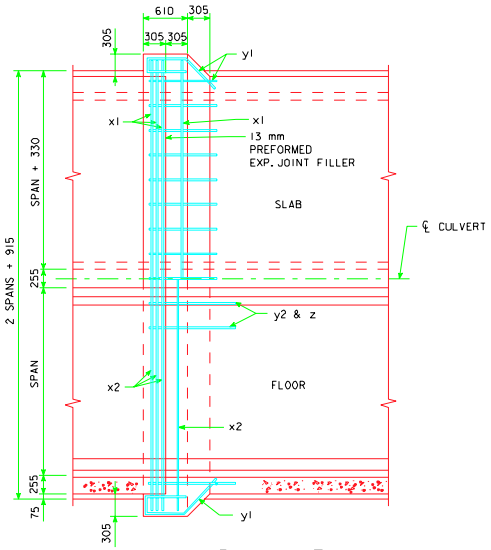
BILL OF REINFORCING STEEL			2400x1800				2400x2400				2400x3000			
MARK	LOCATION	SHAPE	SIZE	NO.	LENGTH	MASS	SIZE	NO.	LENGTH	MASS	SIZE	NO.	LENGTH	MASS
x1	SLAB AND WALLS		20	4	8610	81	20	4	8610	81	20	4	8610	81
x2	FLOOR AND WALLS		20	4	8610	81	20	4	8610	81	20	4	8610	81
x3	WALLS		20	8	1345	25	20	8	1945	36	20	8	2545	48
y1	TOP AND SIDES		20	35	1880	155	20	39	1880	173	20	43	1880	190
y2	BOTTOM		20	19	2260	101	20	19	2260	101	20	19	2260	101
z	BOTTOM & FLOOR		20	19	990	44	20	19	990	44	20	19	990	44
TOTAL MASS						487 kg				516 kg				545 kg
TOTAL CONCRETE m^3						4.7				4.9				5.2



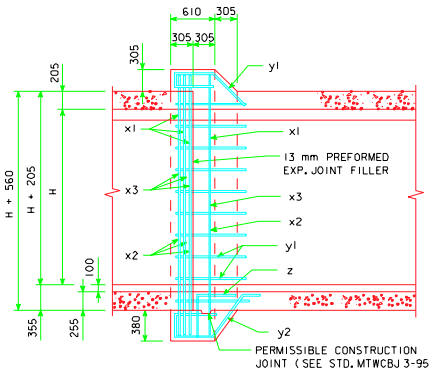
TOP & SIDES - BARS y1



BOTTOM BARS - y2 & z



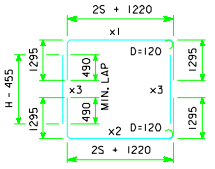
PLAN VIEW



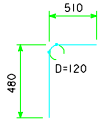
LONGITUDINAL SECTION

A = SLAB THICKNESS
B = FLOOR THICKNESS
C = WALL THICKNESS

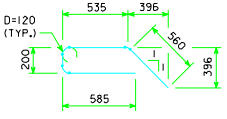
BENT BAR DETAILS



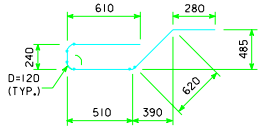
x1, x2 & x3



z



y1



y2

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

NOTES:

1. DIMENSIONS AND QUANTITIES SHOWN BASED ON SLAB THICKNESSS OF 205 mm WALL= 255 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 MTWRCB-G1-95 FOR GENERAL INFORMATION, SPECIFICATIONS, AND DESIGN STRESSES.
6. BARS x1 AND x2 MAY BE FURNISHED IN TWO EQUAL LENGTHS ADDING 24 DIAMETERS TO THE OVERALL LENGTH FOR LAP. THE ABOVE IS TO BE PERFORMED AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.
7. BARREL FLOOR BARS m1 ARE TO BE SHORTENED 150 mm AT BELL JOINTS.

LATEST REVISION DATE : 04-02

APPROVED BY : William A. Knudsgaard

STANDARD DESIGN

CULVERT BELL JOINTS

FOR
TWIN REINFORCED CONCRETE BOX CULVERTS
2400 mm SPANS

PROJECT DEVELOPMENT DIVISION
IOWA DEPARTMENT OF TRANSPORTATION

JULY, 1995

MTWCBJ 1-95

REVISED 04-02 - ADDED PERMISSIBLE CULVERT BELL JOINT. ADDED x3 BAR TO DETAILS AND BAR LIST.
TWCBJIM.SOI

XXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDGNSPEC