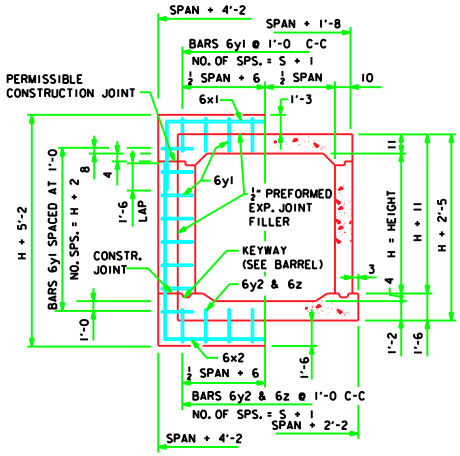
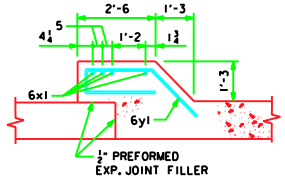
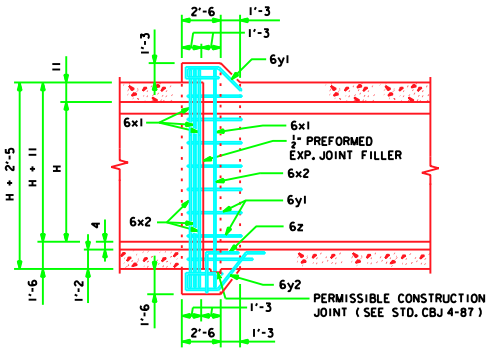


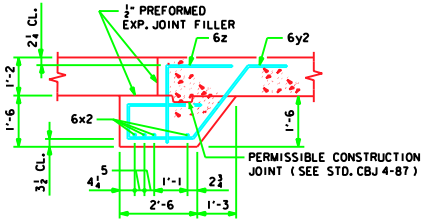
JOINT DETAIL
SECTION THRU BARREL



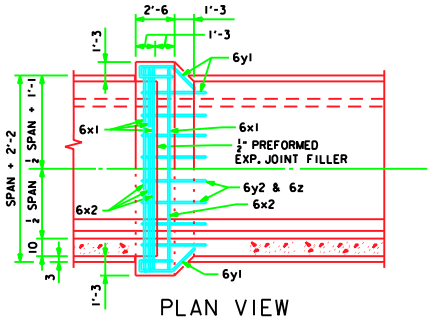
TOP & SIDES - BARS 6y1



LONGITUDINAL SECTION



BOTTOM BARS - 6y2 & 6z



PLAN VIEW

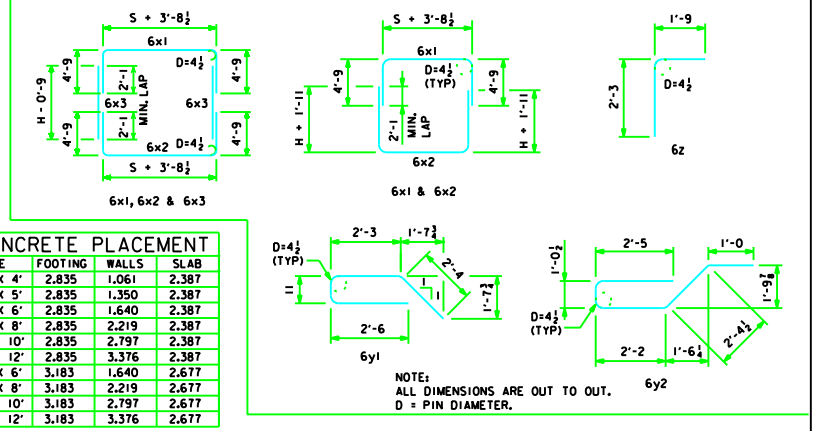
ESTIMATE OF QUANTITIES - ONE JOINT - 10' SPAN

BILL OF REINFORCING STEEL			10' x 4'			10' x 5'			10' x 6'			10' x 8'			10' x 10'			10' x 12'	
MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6x1	SLAB AND WALLS		4	23'-3	140	4	23'-3	140	4	23'-3	140	4	23'-3	140	4	23'-3	140	4	23'-3	140
6x2	FLOOR AND WALLS		4	25'-7	154	4	23'-3	140	4	23'-3	140	4	23'-3	140	4	23'-3	140	4	23'-3	140
6x3	WALLS		—	—	—	8	4'-3	51	8	5'-3	63	8	7'-3	87	8	9'-3	111	8	11'-3	135
6y1	TOP AND SIDES		26	8'-0	312	28	8'-0	336	30	8'-0	360	34	8'-0	409	38	8'-0	457	42	8'-0	505
6y2	BOTTOM		12	9'-0	162	12	9'-0	162	12	9'-0	162	12	9'-0	162	12	9'-0	162	12	9'-0	162
6z	BOTTOM & FLOOR		12	4'-0	72	12	4'-0	72	12	4'-0	72	12	4'-0	72	12	4'-0	72	12	4'-0	72
TOTAL WEIGHT (LBS.)					840			901			937			1010			1082			1154
TOTAL CONCRETE				6.3 cu. yds.			6.6 cu. yds.			6.9 cu. yds.			7.4 cu. yds.			8.0 cu. yds.			8.6 cu. yds.

ESTIMATE OF QUANTITIES - ONE JOINT - 12' SPAN

BILL OF REINFORCING STEEL			12' x 6'			12' x 8'			12' x 10'			12' x 12'	
MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6x1	SLAB AND WALLS		4	25'-3	152	4	25'-3	152	4	25'-3	152	4	25'-3	152
6x2	FLOOR AND WALLS		4	25'-3	152	4	25'-3	152	4	25'-3	152	4	25'-3	152
6x3	WALLS		8	5'-3	63	8	7'-3	87	8	9'-3	111	8	11'-3	135
6y1	TOP AND SIDES		32	8'-0	385	36	8'-0	433	40	8'-0	481	44	8'-0	529
6y2	BOTTOM		14	9'-0	189	14	9'-0	189	14	9'-0	189	14	9'-0	189
6z	BOTTOM & FLOOR		14	4'-0	84	14	4'-0	84	14	4'-0	84	14	4'-0	84
TOTAL WEIGHT (LBS.)					1025			1097			1169			1241
TOTAL CONCRETE				7.5 cu. yds.			8.1 cu. yds.			8.7 cu. yds.			9.2 cu. yds.

BENT BAR DETAILS



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

CONCRETE PLACEMENT

SIZE	FOOTING	WALLS	SLAB
10' X 4'	2.835	1.061	2.387
10' X 5'	2.835	1.350	2.387
10' X 6'	2.835	1.640	2.387
10' X 8'	2.835	2.219	2.387
10' X 10'	2.835	2.797	2.387
10' X 12'	2.835	3.376	2.387
12' X 6'	3.183	1.640	2.677
12' X 8'	3.183	2.219	2.677
12' X 10'	3.183	2.797	2.677
12' X 12'	3.183	3.376	2.677

NOTES:

1. DIMENSIONS AND QUANTITIES SHOWN BASED ON SLAB THICKNESS OF 11", WALL = 10", AND FLOOR = 1'-2.
2. CHANGE LENGTHS OF BARS 6x1, 6x2, 6z, 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 2" CLEARANCE FROM CONCRETE EDGE TO OUTSIDE OF BAR, EXCEPT AS NOTED.
4. MATERIAL AND CONSTRUCTION TO BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS OF I.D.O.T.
5. SEE DRAWING RCB-GI-87 FOR GENERAL INFORMATION, SPECIFICATIONS, AND DESIGN STRESSES.
6. BARREL FLOOR BARS m1 ARE TO BE SHORTENED 6" AT BELL JOINTS.

LATEST REVISION DATE : 04-07

APPROVED BY :

STANDARD DESIGN

CULVERT BELL JOINTS

FOR
REINFORCED CONCRETE BOX CULVERTS
10' AND 12' SPANS

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

MAY , 1987

CBJ 3-87

REVISED 04-07 - BAR SIZE ADDED TO BAR LABEL. UPDATED BAR LISTS TO INCLUDE INDIVIDUAL WEIGHTS. 6x BAR LENGTHS CHANGED.
CBJ 3-87