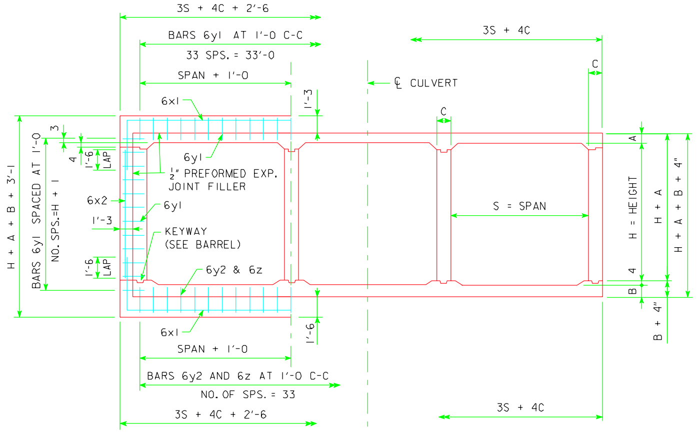
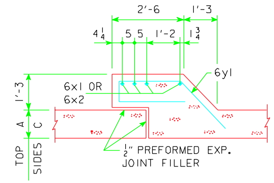
ESTIMATE OF QUANTITIES - ONE JOINT - 12′ SPAN

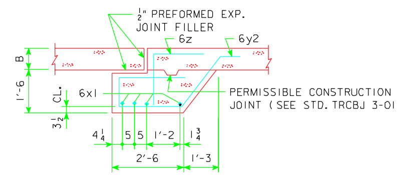
BILL OF REINFORCING STEEL			12′ x 6′			12′ x 8′			12′ x 10′			12′ x 12′		
MARK	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6x1	SLAB AND WALLS		8	51′-1	614	8	51′-1	614	8	51′-5	617	8	52′-1	626
6x2	FLOOR AND WALLS		8	3′-8	44	8	5′-8	68	8	7′-8	92	8	9′-8	116
6y1	TOP AND SIDES		56	8′-0	673	60	8′-0	721	64	8′-1	777	68	8′-2	834
6y2	BOTTOM AND FLOOR		40	9′-3	556	40	9′-3	556	40	9′-3	556	40	9′-3	556
6z	BOTTOM AND FLOOR		40	4′-0	240	40	4′-0	240	40	4′-0	240	40	4′-0	240
TOTAL WEIGHT (LBS.)					2127			2199			2282			2372
TOTAL CONCRETE - CU. YD.			15.676 CU. YD.			16.269 CU. YD.			16.954 CU. YD.			17.744 CU. YD.		



JOINT DETAIL
SECTION THRU BARREL

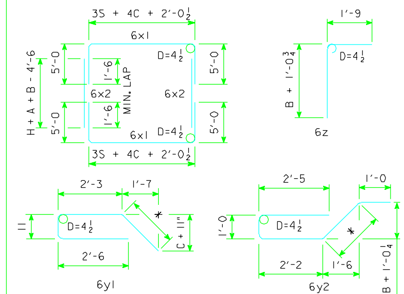


TOP AND SIDES - BAR 6y1



BOTTOM BARS - 6y2 & 6z

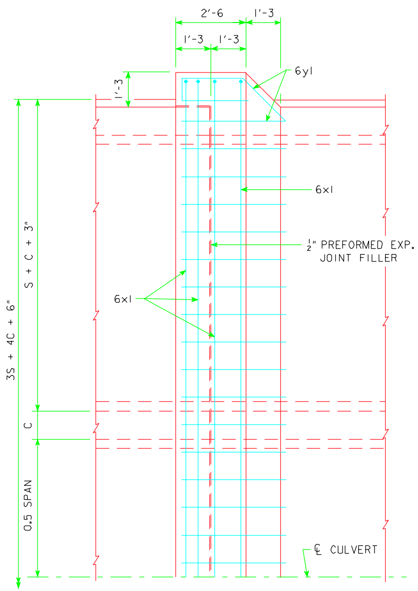
BENT BAR DETAILS



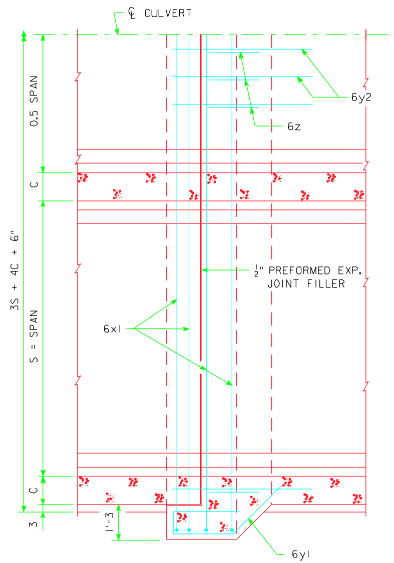
* SQUARE ROOT OF THE SUM OF THE SIDES SQUARED.
ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER.

CONCRETE PLACEMENT

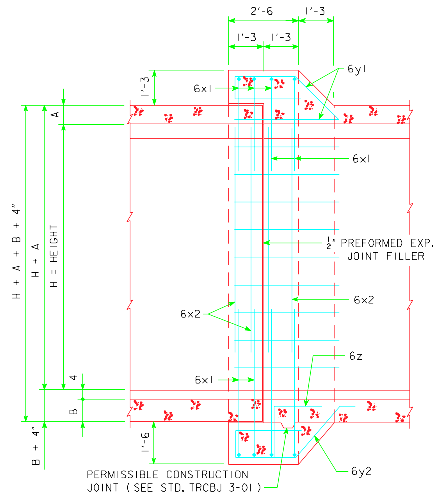
BARREL SIZE	BARREL DIMEN.			BELL JOINT QUANTITIES (CU. YDS.)		
	A	B	C	FOOTING	WALLS	SLAB
12′ x 6′	11½	13½	9	7.682	1.640	6.354
12′ x 8′	11½	14	9	7.697	2.218	6.354
12′ x 10′	11½	14	10	7.755	2.797	6.402
12′ x 12′	11½	14	12	7.870	3.376	6.498



PLAN VIEW - SLAB



PLAN VIEW - FLOOR



LONGITUDINAL SECTION

BELL JOINT NOTES:

1. DIMENSIONS AND QUANTITIES SHOWN ARE BASED ON SLAB, FLOOR, AND WALL THICKNESSES (A, B, AND C, RESPECTIVELY). VALUES FOR THESE DIMENSIONS, UNDER VARYING FILL CONDITIONS, CAN BE FOUND ON THE TRRCB CULVERT BARREL DETAIL SHEETS.
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 SHEET TRRCB-G1-01 FOR GENERAL INFORMATION, SPECIFICATIONS AND DESIGN STRESSES.
6. BARS 6x1 AND 6x2 MAY BE FURNISHED IN TWO EQUAL LENGTHS ADDING 1′-7½ TO THE OVERALL LENGTH FOR LAP. THE ABOVE IS TO BE PERFORMED AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.

LATEST REVISION DATE :
APPROVED BY :

STANDARD DESIGN
CULVERT BELL JOINTS - 12′ SPANS
FOR
TRIPLE REINFORCED CONCRETE BOX CULVERTS

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

SEPT., 2001

TRCBJ 2-01

TRCBJ2.S01 - 09-01 THIS SHEET ISSUED.

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