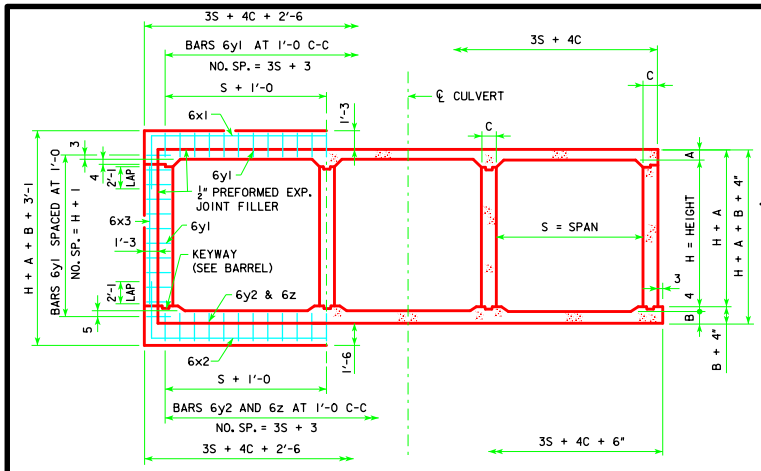
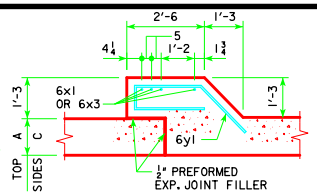
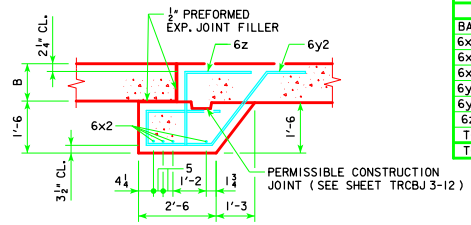


JOINT DETAIL
SECTION THRU BARREL



TOP & SIDES - BARS 6y1



BOTTOM - BARS 6y2 & 6z

ESTIMATE OF QUANTITIES - ONE JOINT - 12' SPAN

BILL OF REINFORCING STEEL			12' x 4'			12' x 5'			12' x 6'			12' x 7'			12' x 8'		
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6x1	SLAB & WALLS		4	51'-3	308	4	51'-3	308	4	51'-3	308	4	51'-3	308	4	51'-3	308
6x2	FLOOR & WALLS		4	53'-5	321	4	55'-5	333	4	51'-1	307	4	51'-1	307	4	51'-1	307
6x3	WALLS		--	--	--	--	--	--	8	5'-4	64	8	6'-4	76	8	7'-4	88
6y1	TOP & SIDES		52	8'-0	625	54	8'-0	649	56	8'-0	673	58	8'-0	697	60	8'-0	721
6y2	BOTTOM		40	9'-9	586	40	9'-9	586	40	9'-9	586	40	9'-10	591	40	9'-10	591
6z	BOTTOM & FLOOR		40	4'-1	245	40	4'-1	245	40	4'-1	245	40	4'-1	245	40	4'-1	245
TOTAL WEIGHT (LB)					2085			2121			2183			2224			2260
TOTAL CONCRETE (CY)				15.0			15.3			15.6			15.9			16.1	

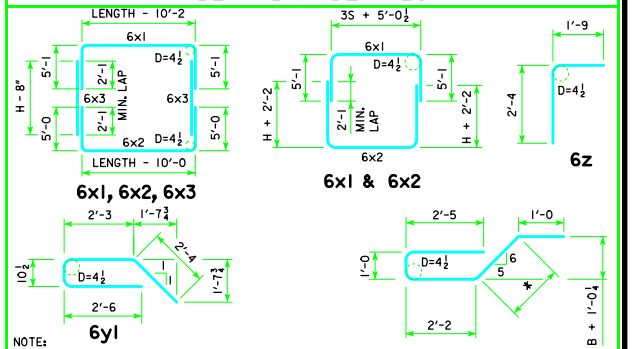
ESTIMATE OF QUANTITIES - ONE JOINT - 12' SPAN

BILL OF REINFORCING STEEL			12' x 9'			12' x 10'			12' x 11'			12' x 12'		
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6x1	SLAB & WALLS		4	51'-5	309	4	51'-9	311	4	52'-3	314	4	52'-7	316
6x2	FLOOR & WALLS		4	51'-3	308	4	51'-7	310	4	52'-1	313	4	52'-5	315
6x3	WALLS		8	8'-4	100	8	9'-4	112	8	10'-4	124	8	11'-4	136
6y1	TOP & SIDES		62	8'-0	745	64	8'-0	769	66	8'-0	793	68	8'-0	817
6y2	BOTTOM		40	9'-10	591	40	9'-10	591	40	9'-10	591	40	9'-10	591
6z	BOTTOM & FLOOR		40	4'-1	245	40	4'-1	245	40	4'-1	245	40	4'-1	245
TOTAL WEIGHT (LB)					2298			2338			2380			2420
TOTAL CONCRETE (CY)				16.5			16.9			17.3			17.7	

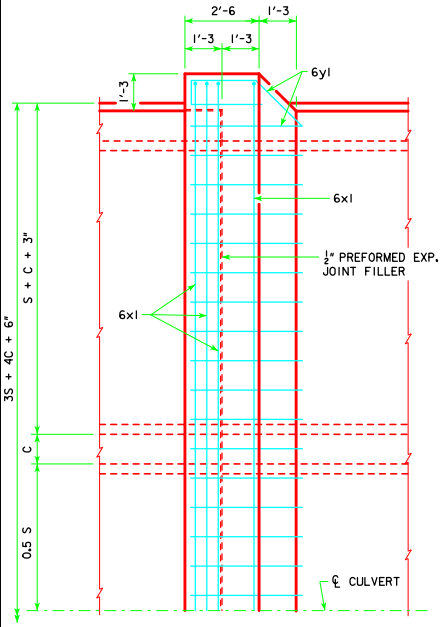
CONCRETE PLACEMENT

BARREL SIZE	BARREL DIMENSION			BELL JOINT QUANTITES (CY)		
	A	B	C	FOOTING	WALLS	SLAB
12' x 4'	14.5	16.5	9	7.588	1.047	6.345
12' x 5'	14.5	16.5	9	7.588	1.332	6.345
12' x 6'	14.5	16.5	9	7.588	1.618	6.345
12' x 7'	15	17	9	7.600	1.903	6.357
12' x 8'	15	17	9	7.600	2.189	6.357
12' x 9'	15	17	9.5	7.629	2.474	6.380
12' x 10'	14.5	17	10.5	7.686	2.760	6.416
12' x 11'	14.5	17	12	7.772	3.045	6.487
12' x 12'	14.5	17	13	7.829	3.331	6.535

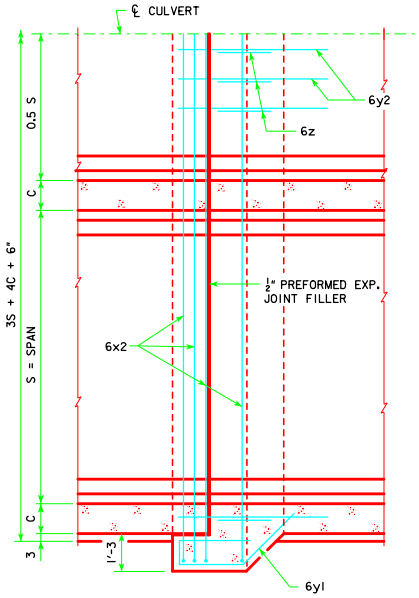
BENT BAR DETAILS



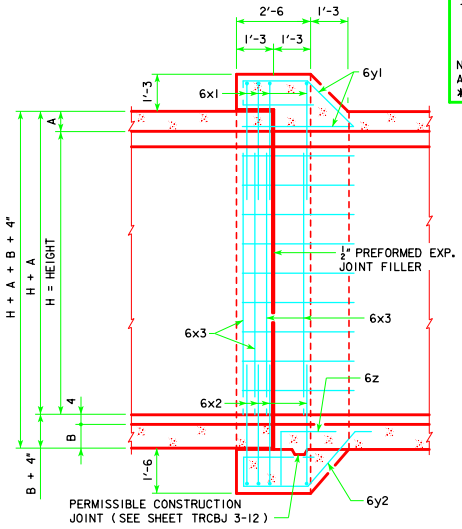
NOTE:
ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER.
* 1.3 TIMES VERTICAL DIMENSION.



PLAN VIEW - SLAB



PLAN VIEW - FLOOR



LONGITUDINAL SECTION

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 GI-12 FOR GENERAL INFORMATION, SPECIFICATIONS AND DESIGN STRESSES.
6. BARS 6x1 & 6x2 MAY BE FURNISHED IN TWO EQUAL LENGTHS ADDING 2'-3 TO THE OVERALL LENGTH TO OBTAIN A 2'-3 MIN. LAP. THE ABOVE IS TO BE PERFORMED AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.
7. BARREL FLOOR BARS m1 & m9 ARE TO BE SHORTENED 6" IN LENGTH AT BELL JOINTS.

07-13
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN
TRIPLE REINFORCED CONCRETE BOX CULVERTS
APRIL, 2012

CULVERT BELL JOINTS
12' SPAN

TRCBJ 2-12

REVISED 07-13 - THE m9 BARS WERE ADDED TO NOTE NUMBER 7.
ENGLISH\REDSIGNED\TRIPLECULVERTS.DGN - TRCBJ 2-12 - THIS SHEET ISSUED 04-12.