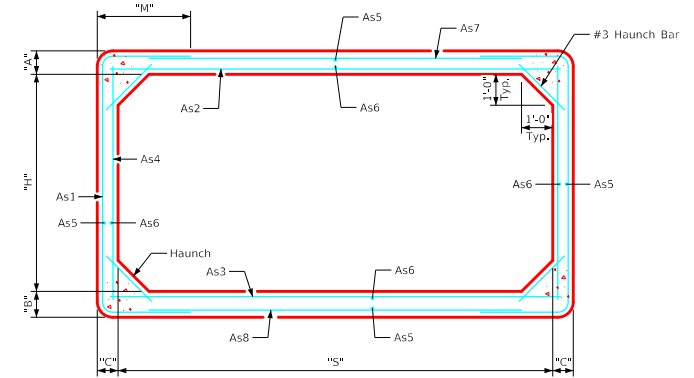


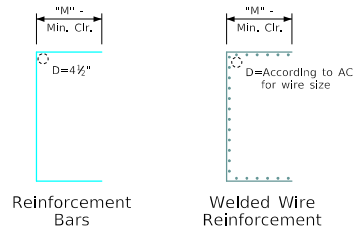
ENGLISHIGNEDPRECASTCULVERTS.DGN - PRCB 14-20 - THIS SHEET ISSUED 12-2020.

Variable Dimensions and Quantities for 14' Span Barrel Sections

Dimensions		Reinforcement Requirements												Weight (LB/FT)						
Size	Class	f _c (KSI)	Fill (FT)	S (FT)	H (FT)	A (IN)	B (IN)	C (IN)	As1		As2		As3		As4		As7/As8			
									Area (IN ² /FT)	Length	M	Area (IN ² /FT)	Length	Area (IN ² /FT)	Length	Area (IN ² /FT)	Length	Area (IN ² /FT)	Length	
14'x4'	1	5.0	2-8	14	4	9	10	9	1.16	12'-7"	3'-10"	0.78	14'-6"	0.75	14'-6"	0.23	4'-6"	0.24	13'-6"	4885
	2	5.0	9-12	14	4	10	10	10	1.37	12'-10"	3'-11"	0.98	14'-6"	0.93	14'-6"	0.24	4'-6"	0.24	13'-8"	5220
	3	5.0	13-16	14	4	11	11	10	1.55	12'-2"	3'-6"	0.99	14'-6"	1.01	14'-6"	0.24	4'-6"	0.27	13'-8"	5610
14'x5'	1	5.0	2-8	14	5	9	10	8	1.28	12'-11"	3'-6"	0.98	14'-6"	0.98	14'-6"	0.20	5'-6"	0.24	13'-4"	4945
	2	5.0	9-13	14	5	10	10	9	1.55	12'-10"	3'-5"	1.19	14'-6"	1.22	14'-6"	0.23	5'-6"	0.24	13'-6"	5300
	3	5.0	14-16	14	5	11	11	10	1.40	12'-10"	3'-4"	1.10	14'-6"	1.13	14'-6"	0.24	5'-6"	0.27	13'-8"	5860
14'x6'	1	5.0	2-8	14	6	9	10	8	1.19	13'-7"	3'-4"	1.08	14'-6"	1.08	14'-6"	0.20	6'-6"	0.24	13'-4"	5145
	2	5.0	9-11	14	6	9	10	9	1.32	13'-11"	3'-6"	1.20	14'-6"	1.20	14'-6"	0.23	6'-6"	0.24	13'-6"	5335
	3	5.0	12-16	14	6	11	11	9	1.38	13'-0"	2'-11"	1.37	14'-6"	1.40	14'-6"	0.23	6'-6"	0.27	13'-6"	5915
14'x7'	1	5.0	2-9	14	7	9	10	8	1.22	14'-3"	3'-2"	1.29	14'-6"	1.31	14'-6"	0.20	7'-6"	0.24	13'-4"	5345
	2	5.0	10-13	14	7	10	10	9	1.35	14'-6"	3'-3"	1.43	14'-6"	1.49	14'-6"	0.23	7'-6"	0.24	13'-6"	5750
	3	5.0	14-16	14	7	11	11	9	1.26	13'-10"	2'-10"	1.49	14'-6"	1.52	14'-6"	0.23	7'-6"	0.27	13'-6"	6140
14'x8'	1	5.0	2-9	14	8	9	10	8	1.17	15'-3"	3'-2"	1.40	14'-6"	1.43	14'-6"	0.20	8'-6"	0.24	13'-4"	5545
	2	5.0	10-13	14	8	10	10	8	1.35	14'-8"	2'-10"	1.73	14'-6"	1.80	14'-6"	0.20	8'-6"	0.24	13'-4"	5735
	3	5.0	14-16	14	8	11	11	9	1.17	14'-10"	2'-10"	1.58	14'-6"	1.64	14'-6"	0.23	8'-6"	0.27	13'-6"	6365
14'x9'	1	5.0	2-9	14	9	9	10	8	1.14	16'-1"	3'-1"	1.52	14'-6"	1.55	14'-6"	0.20	9'-6"	0.24	13'-4"	5745
	2	5.0	10-12	14	9	10	10	8	1.22	15'-8"	2'-11"	1.74	14'-6"	1.83	14'-6"	0.20	9'-6"	0.24	13'-4"	5935
	3	5.0	13-16	14	9	11	11	9	1.10	15'-10"	2'-10"	1.70	14'-6"	1.76	14'-6"	0.23	9'-6"	0.27	13'-6"	6590
14'x10'	1	5.0	2-9	14	10	9	10	8	1.08	17'-3"	3'-2"	1.61	14'-6"	1.67	14'-6"	0.20	10'-6"	0.24	13'-4"	5945
	2	5.0	10-13	14	10	10	9	1.19	17'-6"	3'-3"	1.76	14'-6"	1.86	14'-6"	0.23	10'-6"	0.24	13'-6"	6425	
	3	5.0	14-16	14	10	11	11	9	1.04	17'-0"	2'-11"	1.79	14'-6"	1.88	14'-6"	0.23	10'-6"	0.27	13'-6"	6815
14'x11'	1	5.0	2-9	14	11	9	10	8	1.08	18'-5"	3'-3"	1.73	14'-6"	1.82	14'-6"	0.20	11'-6"	0.24	13'-4"	6145
	2	5.0	10-12	14	11	10	10	9	1.13	18'-8"	3'-4"	1.77	14'-6"	1.89	14'-6"	0.23	11'-6"	0.24	13'-6"	6650
	3	5.0	13-16	14	11	11	12	9	0.95	18'-1"	2'-11"	1.80	14'-6"	1.89	14'-6"	0.23	11'-6"	0.29	13'-6"	7235
14'x12'	1	5.0	2-9	14	12	9	10	8	1.14	20'-3"	3'-8"	1.86	14'-6"	1.94	14'-6"	0.27	12'-6"	0.24	13'-4"	6345
	2	5.0	10-12	14	12	10	10	9	1.13	20'-2"	3'-7"	1.88	14'-6"	2.01	14'-6"	0.23	12'-6"	0.24	13'-6"	6875
	3	5.0	13-16	14	12	11	12	9	0.95	19'-9"	3'-3"	1.89	14'-6"	1.98	14'-6"	0.23	12'-6"	0.29	13'-6"	7460
14'x13'	1	5.0	2-9	14	13	10	10	8	1.08	21'-10"	3'-11"	1.86	14'-6"	2.01	14'-6"	0.38	13'-6"	0.24	13'-4"	6735
	2	5.0	10-13	14	13	10	11	10	1.02	22'-1"	4'-0"	1.70	14'-6"	1.85	14'-6"	0.32	13'-6"	0.24	13'-8"	7665
	3	5.0	14-16	14	13	11	12	10	0.89	21'-5"	3'-7"	1.80	14'-6"	1.94	14'-6"	0.29	13'-6"	0.29	13'-8"	8055
14'x14'	1	5.0	2-7	14	14	10	10	8	1.10	24'-8"	4'-10"	1.77	14'-6"	1.94	14'-6"	0.50	14'-6"	0.24	13'-4"	6935
	2	5.0	8-12	14	14	11	12	10	0.96	23'-1"	3'-11"	1.67	14'-6"	1.82	14'-6"	0.38	14'-6"	0.29	13'-8"	8305
	3	5.0	13-16	14	14	11	12	12	0.90	23'-3"	4'-0"	1.61	14'-6"	1.77	14'-6"	0.32	14'-6"	0.29	14'-0"	9100



Typical Barrel Section



Bent Bar Details

All dimensions are out to out.
 D = pin diameter (min.).
 Pin diameter may be increased if needed to maintain clear cover.

Notes:

1. Longitudinal reinforcement denoted as As5 and As6 must be placed in slab, floor, and walls and must be 0.11 in²/ft minimum.
2. All reinforcement lengths and areas are minimum requirements.
3. If reinforcing bars are substituted for welded wire reinforcing, dimension "M" and/or length of the As7/As8 reinforcement shall be adjusted to ensure adequate lap length is provided.
4. Weight of sections assumes a density of 150 PCF and squared corners.
5. See PRCB G1-20 and G2-20 for additional information and notes.

LATEST REVISION DATE	APPROVED BY BRIDGE ENGINEER	IOWA DOT Highway Division	
		Standard Design Single Precast Reinforced Concrete Box Culverts December, 2020	
		Culvert Barrel Details	PRCB 14-20