GENERAL DATA & ESTIMATED QUANTITIES FOR BOX CULVERTS UNDER HIGH COVER

MAX. 20 FT. COVER — L = 150 FT.

AREA OF OPENING SQ. FT.	SIZE OF CULVERT	MOD. DWG. NO.	"T"	"V"	"W"	BARS "A1" SIZE	BARS "A1" SPAC. IN.	BARS "A2" SIZE	BARS "A2" SPAC. IN.	BARS "B" SIZE	BARS "B" SPAC. IN.	ESTIMATED QUANTITIES TOTAL CULVERT CONC. CU.YDS.	TOTAL CULVERT REINF. LBS.	PER LIN. FT. BARREL CONC. CU.YDS.	PER LIN. FT. BARREL REINF. LBS.	1 AUX. SLAB "J" CONC. CU.YDS.	1 AUX. SLAB "J" REINF. LBS.
16	4x4																
20	5x4																
24	6x4		7½"	6½"	1'-1½"	#6	1'-4"	#6	1'-4"	#5	7"	82.81	16,173	0.4884	100.56	0.35	21
28	7x4		8½"	7"	1'-2½"	#7	1'-4"	#7	1'-4"	#6	8"	100.46	21,360	0.6013	134.90	0.40	23
32	8x4		9"	7½"	1'-3"	#7	1'-2"	#7	1'-2"	#6	7"	115.83	25,554	0.6991	162.01	0.46	26
36	9x4		10"	8½"	1'-4"	#7	1'-0"	#7	1'-0"	#6	6"	139.62	31,212	0.8529	199.77	0.51	29
40	10x4		10½"	9"	1'-4½"	#8	1'-4"	#8	1'-4"	#7	8"	157.52	34,015	0.9676	218.04	0.57	32
25	5x5		6½"	6"	1'-4½"	#6	1'-4"	#6	1'-4"	#5	7"	75.11	15,770	0.4259	96.40	0.30	18
30	6x5		7½"	6½"	1'-5½"	#6	1'-2"	#6	1'-2"	#5	6"	91.32	19,343	0.5286	119.72	0.35	21
35	7x5		8½"	7"	1'-6½"	#7	1'-4"	#7	1'-4"	#6	8"	109.52	22,939	0.6446	143.42	0.40	23
40	8x5		9½"	8"	1'-7½"	#7	1'-2"	#7	1'-2"	#6	7"	132.78	27,503	0.7942	172.89	0.46	27
45	9x5		10"	8½"	1'-8"	#7	1'-0"	#7	1'-0"	#6	6"	150.22	33,028	0.9054	209.79	0.51	29
50	10x5		11½"	9½"	1'-9½"	#7	10"	#7	10"	#6	5"	182.60	41,562	1.1155	266.18	0.57	32
60	12x5		1'-0½"	10½"	1'-10½"	#8	1'-0"	#8	1'-0"	#7	6"	224.56	51,304	1.3850	330.26	0.68	38
24	4x6																
36	6x6		7½"	7"	1'-2½"	#7	1'-4"	#7	1'-4"	#6	7"	107.46	24,232	0.5910	148.70	0.35	21
48	8x6		9½"	8"	1'-4½"	#7	1'-2"	#7	1'-2"	#6	6"	147.56	31,102	0.8436	193.46	0.46	27
60	10x6		11½"	9½"	1'-6½"	#8	1'-2"	#8	1'-2"	#7	7"	190.35	42,363	1.1742	266.92	0.57	32
72	12x6		1'-1"	10½"	1'-8"	#8	1'-0"	#8	1'-0"	#7	6"	249.20	53,634	1.4923	341.78	0.68	38
84	14x6		1'-2½"	1'-0½"	1'-9½"	#9	1'-2"	#9	1'-2"	#8	7"	312.88	66,233	1.9026	423.43	0.79	44
96	16x6		1'-4"	1'-2"	1'-11"	#9	1'-0"	#9	1'-0"	#8	6"	379.02	82,947	2.3292	535.08	0.91	50
108	18x6		1'-6"	1'-3½"	2'-1"	#10	1'-2"	#10	1'-2"	#10	8"	461.01	103,863	2.8611	672.31	1.02	56
120	20x6		1'-7½"	1'-5"	2'-2½"	#10	1'-0"	#10	1'-0"	#10	7"	540.70	127,776	3.3781	830.49	1.13	62
64	8x8		10"	9"	1'-10"	#6	1'-2"	#7	1'-2"	#6	6"	192.31	36,192	1.0309	216.15	0.47	27
80	10x8		11½"	10"	1'-11½"	#7	11"	#7	11"	#7	7"	239.38	47,131	1.3220	287.60	0.58	33
96	12x8		1'-1½"	11"	2'-1½"	#9	1'-3"	#9	1'-3"	#7	6½"	299.04	57,832	1.6960	358.43	0.68	38
112	14x8		1'-3½"	1'-0½"	2'-3½"	#8	11"	#8	11"	#7	5"	371.71	73,706	2.1561	462.52	0.79	44
128	16x8		1'-5"	1'-2"	2'-5"	#9	11"	#9	11"	#8	6"	444.16	92,864	2.6152	588.95	0.91	50
144	18x8		1'-6½"	1'-4"	2'-6½"	#9	11"	#9	11"	#8	5"	528.00	109,784	3.1502	700.39	1.02	56
160	20x8		1'-8½"	1'-6"	2'-8½"	#9	10"	#9	10"	#9	5½"	629.23	132,925	3.7994	853.28	1.14	62
100	10x10		11½"	11"	2'-11½"	#7	11"	#7	11"	#7	6½"	282.15	53,328	1.5191	310.54	0.58	33
120	12x10		1'-1½"	1'-0"	3'-1½"	#8	1'-0"	#8	1'-0"	#7	5½"	343.64	66,984	1.9074	408.58	0.69	39
140	14x10		1'-3½"	1'-1½"	3'-3½"	#8	11"	#8	11"	#8	6½"	419.12	79,930	2.3881	494.14	0.80	44
160	16x10		1'-5"	1'-3"	3'-5"	#9	11"	#9	11"	#9	7½"	494.24	100,249	2.8673	627.36	0.91	50
180	18x10		1'-7½"	1'-4"	3'-7½"	#9	10"	#9	10"	#8	5"	589.12	120,876	3.4753	762.94	1.02	56
200	20x10		1'-9"	1'-6"	3'-9"	#10	1'-0"	#10	1'-0"	#9	5½"	685.09	142,933	4.0926	908.83	1.14	62
144	12x12		1'-2"	1'-0½"	3'-11"	#8	1'-0"	#8	1'-0"	#7	5"	399.91	76,761	2.1430	457.87	0.70	39
168	14x12		1'-4½"	1'-2"	4'-1½"	#8	10"	#8	10"	#8	6½"	487.59	89,762	2.7006	543.52	0.81	45
192	16x12		1'-6"	1'-2½"	4'-3"	#9	11"	#9	11"	#8	5½"	554.14	109,631	3.1203	674.34	0.91	51
216	18x12		1'-7½"	1'-4½"	4'-4½"	#9	10"	#9	10"	#8	5"	647.76	128,528	3.7199	797.68	1.02	56
240	20x12		1'-10"	1'-5½"	4'-7"	#10	11"	#10	11"	#9	5½"	755.25	156,303	4.4084	981.79	1.13	62

MAX. 25 FT. COVER — L = 150 FT.

SIZE OF CULVERT	"T"	"V"	"W"	BARS "A1" SIZE	BARS "A1" SPAC. IN.	BARS "A2" SIZE	BARS "A2" SPAC. IN.	BARS "B" SIZE	BARS "B" SPAC. IN.	ESTIMATED QUANTITIES TOTAL CULVERT CONC. CU.YDS.	TOTAL CULVERT REINF. LBS.	PER LIN. FT. BARREL CONC. CU.YDS.	PER LIN. FT. BARREL REINF. LBS.	1 AUX. SLAB "J" CONC. CU.YDS.	1 AUX. SLAB "J" REINF. LBS.	SIZE OF CULVERT
4x4	6"	6"	1'-0"	#5	1'-4"	#5	1'-4"	#5	8"	58.15	11,436	0.3333	69.95	0.25	15	4x4
5x4	7"	6½"	1'-1"	#5	1'-0"	#5	1'-0"	#5	7"	72.38	14,194	0.4234	87.80	0.30	18	5x4
6x4	8"	7"	1'-2"	#6	1'-2"	#6	1'-2"	#5	6"	88.59	17,991	0.5267	112.67	0.35	21	6x4
7x4	9"	7½"	1'-3"	#7	1'-4"	#7	1'-4"	#6	7"	106.85	22,759	0.6435	143.90	0.41	24	7x4
8x4	10"	8"	1'-4"	#7	1'-2"	#7	1'-2"	#6	6"	127.09	27,514	0.7737	175.28	0.46	27	8x4
9x4	11"	9"	1'-5"	#8	1'-4"	#8	1'-4"	#7	7"	152.05	33,657	0.9352	215.71	0.52	30	9x4
10x4	11½"	9½"	1'-5½"	#8	1'-2"	#8	1'-2"	#7	7"	170.99	38,356	1.0569	246.24	0.57	32	10x4
5x5	7"	6½"	1'-5"	#6	1'-4"	#6	1'-4"	#5	7"	80.79	15,918	0.4635	97.35	0.30	18	5x5
6x5	8"	7"	1'-6"	#7	1'-4"	#7	1'-4"	#6	8"	97.56	21,362	0.5699	133.32	0.35	21	6x5
7x5	9"	7½"	1'-7"	#7	1'-2"	#7	1'-2"	#6	7"	116.36	25,539	0.6898	160.25	0.41	24	7x5
8x5	10"	8½"	1'-8"	#7	1'-0"	#7	1'-0"	#6	6"	140.26	31,091	0.8436	197.26	0.47	27	8x5
9x5	11"	9"	1'-9"	#7	1'-0"	#7	1'-0"	#6	5"	163.12	36,020	0.9907	229.70	0.52	30	9x5
10x5	1'-0½"	10½"	1'-10½"	#8	1'-2"	#8	1'-2"	#7	6"	199.99	43,725	1.2307	280.19	0.58	33	10x5
12x5	1'-2"	11½"	2'-0"	#8	1'-0"	#8	1'-0"	#7	6"	250.61	52,155	1.5576	335.80	0.69	38	12x5
4x6	6"	6½"	1'-1"	#5	1'-2"	#5	1'-2"	#5	6"	81.05	16,410	0.4290	97.76	0.25	15	4x6
6x6	8"	7½"	1'-3"	#7	1'-4"	#7	1'-4"	#6	7"	114.27	24,440	0.6358	150.06	0.36	21	6x6
8x6	10"	8½"	1'-5"	#7	1'-2"	#7	1'-2"	#6	6"	155.52	31,343	0.8961	195.00	0.47	27	8x6
10x6	1'-0"	10"	1'-7"	#8	1'-2"	#8	1'-2"	#7	7"	208.49	42,716	1.2346	269.21	0.58	33	10x6
12x6	1'-2"	11½"	1'-9"	#8	1'-0"	#8	1'-0"	#7	6"	269.80	54,382	1.6286	346.73	0.69	38	12x6
14x6	1'-4"	1'-1½"	1'-11"	#9	1'-2"	#9	1'-2"	#8	6"	343.46	71,759	2.1050	460.81	0.80	44	14x6
16x6	1'-5½"	1'-3"	2'-0½"	#9	1'-0"	#9	1'-0"	#8	5"	412.94	90,984	2.5540	588.62	0.91	50	16x6
18x6	1'-7½"	1'-5"	2'-2½"	#10	1'-2"	#10	1'-2"	#10	7"	502.67	112,281	3.1374	727.13	1.03	56	18x6
20x6	1'-9"	1'-6½"	2'-4"	#10	1'-0"	#10	1'-0"	#10	6"	585.82	138,954	3.6775	906.27	1.14	62	20x6
8x8	10½"	9½"	1'-10½"	#7	1'-1"	#7	1'-1"	#6	5½"	201.35	38,533	1.0903	232.30	0.47	27	8x8
10x8	1'-0½"	10½"	2'-0½"	#8	1'-2"	#8	1'-2"	#7	6½"	255.13	49,452	1.4251	303.47	0.58	33	10x8
12x8	1'-3"	11½"	2'-3"	#9	1'-2"	#9	1'-2"	#8	7½"	323.59	63,714	1.8565	396.44	0.69	38	12x8
14x8	1'-4½"	1'-1½"	2'-4½"	#8	10"	#8	10"	#8	6"	396.91	80,869	2.3218	509.99	0.80	44	14x8
16x8	1'-6½"	1'-3"	2'-6½"	#9	10"	#9	10"	#8	5½"	480.38	101,660	2.8534	647.44	0.91	50	16x8
18x8	1'-8"	1'-5"	2'-8"	#9	10"	#9	10"	#9	6"	567.75	119,371	3.4115	763.88	1.03	56	18x8
20x8																
10x10	1'-0½"	11½"	3'-0½"	#7	10"	#7	10"	#7	6"	298.96	57,474	1.6293	346.46	0.59	33	10x10
12x10	1'-2½"	1'-1"	3'-2½"	#8	11"	#8	11"	#7	5"	368.51	72,887	2.0705	447.80	0.70	39	12x10
14x10	1'-4½"	1'-2"	3'-4½"	#9	1'-0"	#9	1'-0"	#8	6"	440.50	88,502	2.5278	550.15	0.81	45	14x10
16x10	1'-6½"	1'-4"	3'-6½"	#9	11"	#9	11"	#9	6½"	532.67	107,927	3.1193	679.51	0.92	51	16x10
18x10	1'-9"	1'-5"	3'-9"	#10	1'-0"	#10	1'-0"	#9	6"	630.98	128,968	3.7500	816.77	1.03	56	18x10
20x10																
12x12	1'-3"	1'-1½"	4'-0"	#8	11"	#8	11"	#8	6"	426.81	83,372	2.3194	501.97	0.70	39	12x12
14x12	1'-5½"	1'-2½"	4'-2½"	#9	11"	#9	11"	#8	5½"	510.08	102,572	2.8475	628.39	0.81	45	14x12
16x12	1'-7½"	1'-3½"	4'-4½"	#9	10"	#9	10"	#9	6½"	594.60	119,284	3.3851	738.79	0.92	50	16x12
18x12	1'-9"	1'-5½"	4'-6"	#10	11"	#10	11"	#9	6"	691.70	141,765	4.0077	886.11	1.03	56	18x12
20x12																

GENERAL NOTES:

This Drawing Shows The Additional Reinforcing Bars And The Increased Dimensions And Reinforcing Bar Sizes Necessary To Modify A Single Cell Culvert For Cover Less Than Or In Excess Of That Provided By Basic Culvert Drawings.

All Other Dimensions, Reinforcement Details And General Requirements Of Basic Culvert Drawings Shall Apply Except As Specifically Modified By This Drawing And Drawing IWS-3.

Barrel Details Shown On This Drawing Shall Be Used With Cover Less Than 2'-6" And More Than Maximum Shown On Basic Culvert Drawings.

Quantities Shown On This Drawing Are For Culverts With Barrels Per This Drawing And Wings With 3:1 Slope Per This Drawing And Drawing IWS-3.

Quantities Shown On This Drawing For "TOTAL CULVERT" Are For Complete Culvert Of The Length Noted And Include Barrel, Parapets, Wings And Aprons, Cut-Off Walls, Auxiliary Slabs "W" Where Required And Two Auxiliary Slabs "J".

Quantities Shown On This Drawing Will Be Used As A Basis For Final Payment For Culverts Constructed In Accordance With This Drawing, Drawing IWS-3 And Basic Culvert Drawings.

DATE	REVISION	BY

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

BOX CULVERT DRAWING

IBS CULVERTS MODIFIED FOR HIGH COVER WINGS WITH 3:1 SLOPE

WORKING NUMBER: SD-IBSM-3WA

SHEET NUMBER

FILENAME:

DESIGN TEAM ____ CHECKED ____ DATE ____

COUNTY:

DESIGN TEAM:

PROJECT NO.:

FILENAME: