

Note to Designer:  
The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Contents within the inner border line shall not be altered.

NO.	Original Issue	DESCRIPTION OF REVISIONS	MADE BY	DATE
1			S.J.H.	2-12
2		Added 3'-4.5' height for existing box extensions only	D.B.B.	5-15
3				
4				

Span *S*	Height *H*	Slab *T*	Walls *W*	aa		cc		ee		gg		hh		F	
				Bar Size	Spacing	Number	Bar Size	Spacing	Number	Bar Size	Spacing	Number	Bar Size		Spacing
6'	3'	9 1/2"	9"	5	12"	4'-4"	20	5	6"	7'-2"	14	4	8"	5'-2"	3'-0"
	4'	9 1/2"	9"	5	12"	5'-4"	24	5	6"	7'-2"	16	4	8"	5'-11"	3'-0"
	5'	9 1/2"	9"	5	12"	6'-4"	24	5	6"	7'-2"	16	4	6"	6'-9"	3'-0"
	6'	9 1/2"	9"	5	12"	7'-4"	28	5	6"	7'-2"	18	4	6"	7'-3"	3'-0"
	7'	9 1/2"	9"	5	12"	8'-4"	32	5	6"	7'-2"	18	4	6"	7'-9"	3'-0"
8'	3'	10"	11"	5	12"	4'-5"	20	5	6"	9'-6"	18	4	6"	6'-2"	3'-4"
	4'	10"	11"	5	12"	5'-5"	24	5	6"	9'-6"	20	4	6"	6'-8"	3'-4"
	5'	10"	11"	5	12"	6'-5"	24	5	6"	9'-6"	20	4	6"	7'-2"	3'-4"
	6'	10"	11"	5	12"	7'-5"	28	5	6"	9'-6"	20	4	6"	7'-8"	3'-4"
	7'	10"	11"	5	12"	8'-5"	32	6	8"	9'-6"	22	4	6"	8'-2"	3'-4"
10'	3'	10"	13"	5	12"	4'-5"	20	6	8"	11'-10"	22	5	6"	7'-4"	4'-4"
	4'	10"	13"	5	12"	5'-5"	24	6	8"	11'-10"	22	5	6"	7'-10"	4'-4"
	5'	10"	13"	5	12"	6'-5"	24	6	7"	11'-10"	24	5	6"	8'-4"	4'-4"
	6'	10"	13"	5	12"	7'-5"	28	6	7"	11'-10"	24	5	6"	8'-10"	4'-4"
	7'	10"	13"	5	12"	8'-5"	32	6	7"	11'-10"	26	5	6"	9'-4"	4'-4"
12'	8'	11 1/2"	15"	5	9"	9'-8"	32	7	7"	14'-2"	38	6	6"	10'-5"	4'-8"
	9'	11 1/2"	15"	5	9"	10'-8"	36	7	7"	14'-2"	38	6	6"	10'-11"	4'-8"
	10'	11 1/2"	15"	5	8"	11'-8"	40	7	7"	14'-2"	40	6	6"	11'-5"	4'-8"
	11'	12"	15"	5	8"	12'-9"	40	7	7"	14'-2"	42	6	6"	11'-11"	4'-8"
	12'	12"	15"	5	8"	13'-9"	44	7	6"	14'-2"	46	6	6"	12'-5"	4'-8"

\* Total number of bars in the cross-section.

Span *S*	Height *H*	Slab *T*	Walls *W*	aa		cc		ee		gg		hh		F	
				Bar size	Spacing	Number	Bar size	Spacing	Number	Bar size	Spacing	Number	Bar size		Spacing
6'	3'	10 1/2"	9"	5	12"	4'-5"	20	6	7"	7'-2"	14	5	6"	5'-4"	2'-6"
	4'	11"	9"	5	12"	5'-6"	24	6	7"	7'-2"	14	5	6"	5'-11"	2'-6"
	5'	11"	9"	5	12"	6'-7"	24	6	7"	7'-2"	14	5	6"	6'-5"	2'-6"
	6'	11"	9"	5	12"	7'-7"	28	6	7"	7'-2"	14	5	6"	6'-11"	2'-6"
8'	3'	13"	11"	5	10"	4'-10"	20	7	7"	9'-6"	18	5	6"	5'-10"	2'-8"
	4'	13"	11"	5	10"	5'-10"	24	7	7"	9'-6"	18	5	6"	6'-4"	2'-8"
	5'	13 1/2"	11"	5	10"	7'-0"	24	7	7"	9'-6"	18	5	8"	6'-11"	2'-8"
	6'	13 1/2"	11"	5	10"	8'-0"	28	7	7"	9'-6"	18	5	8"	7'-5"	2'-8"
10'	3'	16"	13"	5	6"	5'-4"	20	8	7"	11'-10"	22	6	6"	6'-9"	3'-4"
	4'	16"	13"	5	6"	6'-4"	24	8	7"	11'-10"	22	6	6"	7'-6"	3'-4"
	5'	16"	13"	5	8"	7'-4"	24	8	7"	11'-10"	22	6	8"	8'-0"	3'-4"
	6'	16"	13"	5	10"	8'-5"	28	8	7"	11'-10"	22	6	8"	8'-5"	3'-4"
12'	8'	19 1/2"	15"	5	10"	11'-0"	32	9	7"	14'-2"	26	6	7"	10'-6"	3'-9"
	9'	19 1/2"	15"	5	10"	12'-0"	36	9	7"	14'-2"	26	6	7"	10'-6"	3'-9"
	10'	19 1/2"	15"	5	10"	13'-0"	40	9	7"	14'-2"	26	6	7"	10'-11"	3'-9"
	11'	19 1/2"	15"	5	8"	14'-0"	40	9	7"	14'-2"	26	6	7"	11'-8"	3'-9"

New box culverts shall not be constructed using 3' or 4' heights without special approval from ADOT Bridge Group. Tables referencing these sizes are provided for extension of existing box culverts only.

Span *S*	Height *H*	Slab *T*	Walls *W*	aa		cc		ee		gg		hh		F	
				Bar Size	Spacing	Number	Bar Size	Spacing	Number	Bar Size	Spacing	Number	Bar Size		Spacing
6'	3'	8"	9"	5	12"	4'-1"	20	5	6"	7'-2"	14	5	6"	5'-2"	2'-6"
	4'	8"	9"	5	12"	5'-1"	24	5	6"	7'-2"	14	5	6"	5'-8"	2'-6"
	5'	8"	9"	5	12"	6'-1"	24	5	6"	7'-2"	14	5	6"	6'-2"	2'-6"
	6'	8"	9"	5	12"	7'-1"	28	5	6"	7'-2"	14	5	6"	6'-8"	2'-6"
	7'	8"	9"	5	12"	8'-1"	32	5	6"	7'-2"	14	5	6"	7'-2"	2'-6"
8'	3'	9"	11"	5	9"	4'-2"	20	5	6"	9'-6"	18	5	6"	5'-9"	2'-10"
	4'	9"	11"	5	9"	5'-2"	24	5	6"	9'-6"	18	5	6"	6'-3"	2'-10"
	5'	9 1/2"	11"	5	10"	6'-4"	24	6	7"	9'-6"	18	5	6"	6'-9"	2'-10"
	6'	9 1/2"	11"	5	10"	7'-4"	28	6	7"	9'-6"	18	5	6"	7'-3"	2'-10"
	7'	9 1/2"	11"	5	10"	8'-4"	32	6	7"	9'-6"	18	5	6"	7'-9"	2'-10"
10'	3'	10 1/2"	13"	5	9"	4'-4"	20	6	6"	11'-10"	22	6	6"	6'-6"	3'-6"
	4'	10 1/2"	13"	5	9"	5'-4"	24	6	6"	11'-10"	22	6	6"	7'-2"	3'-6"
	5'	10 1/2"	13"	5	9"	6'-4"	24	6	6"	11'-10"	22	6	6"	7'-8"	3'-6"
	6'	11"	13"	5	10"	7'-7"	28	6	6"	11'-10"	22	6	8"	8'-2"	3'-6"
	7'	11"	13"	5	10"	8'-7"	32	6	6"	11'-10"	22	6	8"	8'-8"	3'-6"
12'	8'	13"	15"	5	10"	9'-11"	32	7	6"	14'-2"	26	6	7"	9'-7"	3'-9"
	9'	13"	15"	5	10"	10'-11"	36	7	6"	14'-2"	26	6	7"	10'-1"	3'-9"
	10'	13"	15"	5	10"	11'-11"	40	7	6"	14'-2"	26	6	7"	10'-7"	3'-9"
	11'	13"	15"	5	9"	12'-11"	40	7	6"	14'-2"	26	6	7"	11'-1"	3'-9"
	12'	13 1/2"	15"	5	8"	14'-0"	44	7	6"	14'-2"	26	6	6"	11'-8"	3'-9"

Span *S*	Height *H*	Table I		Table II		Table III		Table IV		Table V	
		Concrete C. Y.	Reinf. Steel Lbs.	Concrete C. Y.	Reinf. Steel Lbs.	Concrete C. Y.	Reinf. Steel Lbs.	Concrete C. Y.	Reinf. Steel Lbs.	Concrete C. Y.	Reinf. Steel Lbs.
6'	3'	0.662	83.9	0.593	109.1	0.639	111.8	0.685	112.5	0.708	118.2
	4'	0.718	95.3	0.648	118.0	0.694	120.8	0.741	121.5	0.787	128.0
	5'	0.773	109.7	0.704	124.3	0.750	127.7	0.796	128.7	0.843	134.4
	6'	0.829	118.5	0.759	133.2	0.806	136.6	0.852	137.7	0.898	143.3
8'	3'	0.881	112.7	0.820	131.1	0.911	144.9	1.002	156.3	1.063	159.6
	4'	0.949	121.5	0.888	140.7	0.979	153.9	1.070	163.9	1.131	168.9
	5'	1.016	126.2	0.986	155.7	1.047	161.2	1.138	171.2	1.229	162.3
	6'	1.084	133.7	1.054	165.0	1.145	171.0	1.206	180.8	1.297	170.6
10'	3'	1.152	145.6	1.122	174.4	1.213	179.9	1.274	189.7	1.365	178.9
	4'	1.220	150.4	1.190	181.0	1.281	186.2	1.372	196.2	1.433	184.5
	5'	1.076	157.6	1.114	196.8	1.264	186.9	1.377	249.7	1.527	242.0
	6'	1.156	166.6	1.194	210.3	1.344	210.2	1.457	248.3	1.607	263.4
12'	3'	1.237	181.7	1.274	219.1	1.424	218.1	1.537	262.7	1.687	241.9
	4'	1.317	190.7	1.392	206.4	1.505	227.9	1.655	268.5	1.767	246.5
	5'	1.397	200.9	1.472	214.3	1.585	225.5	1.735	252.1	1.848	255.4
	6'	1.477	211.1	1.552	221.3	1.703	233.5	1.815	259.1	1.928	262.4
12'	8'	1.869	305.6	2.003	287.4	2.182	303.8	2.361	327.1	2.585	343.7
	9'	1.961	317.0	2.096	297.8	2.275	314.1	2.498	353.2	2.677	354.0
	10'	2.054	333.9	2.188	308.1	2.412	325.5	2.591	361.8	2.770	363.5
	11'	2.191	344.6	2.281	319.3	2.505	356.4	2.684	375.8	2.863	382.5
12'	2.284	375.7	2.418	355.9	2.597	372.8	2.776	418.9	3.000	429.3	

Span *S*	Height *H*	Slab *T*	Walls *W*	aa		cc		ee		gg		hh		F	
				Bar Size	Spacing	Number	Bar Size	Spacing	Number	Bar Size	Spacing	Number	Bar Size		Spacing
6'	3'	9"	9"	5	12"	4'-3"	20	6	8"	7'-2"	14	5	6"	5'-2"	2'-6"
	4'	9"	9"	5	12"	5'-3"	24	6	8"	7'-2"	14	5	6"	5'-8"	2'-6"
	5'	9"	9"	5	12"	6'-3"	24	6	8"	7'-2"	14	5	6"	6'-3"	2'-6"
	6'	9"	9"	5	12"	7'-3"	28	6	8"	7'-2"	14	5	6"	6'-9"	2'-6"
	7'	9"	9"	5	12"	8'-3"	32	6	8"	7'-2"	14	5	6"	7'-3"	2'-6"
8'	3'	10 1/2"	11"	5	12"	4'-4"	20	6	6"	9'-6"	18	5	6"	5'-7"	2'-8"
	4'	10 1/2"	11"	5	12"	5'-4"	24	6	6"	9'-6"	18	5	6"	6'-1"	2'-8"
	5'	10 1/2"	11"	5	12"	6'-4"	24	6	6"	9'-6"	18	5	6"	6'-8"	2'-8"
	6'	11"	11"	5	12"	7'-7"	28	6	6"	9'-6"	18	5	6"	7'-3"	2'-8"
	7'	11"	11"	5	12"	8'-7"	32	6	6"	9'-6"	18	5	6"	7'-9"	2'-8"
10'	3'	12 1/2"	13"	5	9"	4'-8"	20	7	7"	11'-10"	22	6	7"	6'-6"	3'-4"
	4'	12 1/2"	13"	5	9"	5'-8"	24	7	7"	11'-10"	22	6	7"	7'-1"	3'-4"
	5'	12 1/2"	13"	5	9"	6'-8"	24	7	7"	11'-10"	22	6	7"	7'-7"	3'-4"
	6'	12 1/2"	13"	5	10"	7'-10"	28	7	7"	11'-10"	22	6	6"	8'-2"	3'-4"
	7'	12 1/2"	13"	5	10"	8'-10"	32	7	7"	11'-10"	22	6	8"	8'-6"	3'-4"
12'	8'	15"	15"	5	10"	10'-3"	32	8	7"	14'-2"	26	6	7"	9'-9"	3'-9"
	9'	15"	15"	5	10"</										