

TRIPLE CONCRETE BOX CULVERT DIMENSIONS & QUANTITIES (EXCLUDING HEADWALLS & TOEWALLS)

BOX SIZE		FILL HEIGHT ALLOWED		SLAB & WALL THICKNESS (INCHES)		BAR SIZES								d ₁ ▲	DIMENSIONS					QUANTITIES						
S	R	HT.	WIDTH	T _t	T _b	TW & TW ₁	#	#	#	#	#	#	#		#	#	#	#	h ₁	h ₂	v ₁	v ₂	v ₃	CONCRETE	REBAR STL	
FT.	FT.	FT.-IN.	FT.-IN.	FT.-FT.														NO.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	CU.YDS./LIN.FT.	LBS./LIN.FT.	
8	6	7-6.5	27-4	0 TO 8	8.5	10	10	6	6	6	4	4	4	5	6			128	2-9	3-4	6-6	2-9	2-5	2.301	526	
		7-9.5	27-4	>8 TO 12	10	11.5	10	6	5	6	5	4	4	4	5				2-7	2-9	6-8	2-5	2-5	2.555	490	
		8-1.5	27-4	>12 TO 16	12	13.5	10	6	5	6	5	4	4	4	5				2-7	2-9	6-9	2-8	2-8	2.892	495	
		8-5.5	27-4	>16 TO 20	14	15.5	10	6	5	6	5	4	4	4	4				2-7	2-7	7-0	2-9	2-9	3.229	486	
		8-9.5	27-4	>20 TO 26	16	17.5	10	6	6	6	5	4	4	4	5				3-1	2-7	7-2	3-4	2-11	3.567	529	
		9-1	27-4	>26 TO 30	18	19	10	6	6	6	5	4	4	4	5				3-6	2-9	7-4	3-6	3-1	3.862	545	
	8	8	9-6.5	27-4	0 TO 8	8.5	10	10	6	6	6	4	4	4	5	6			144	2-9	3-4	8-6	2-9	2-4	2.548	521
			9-9.5	27-4	>8 TO 12	10	11.5	10	6	5	6	5	4	4	4	5				2-7	2-9	8-8	2-10	2-5	2.801	524
			10-1.5	27-4	>12 TO 16	12	13.5	10	6	5	6	5	4	4	4	5				2-7	2-9	8-10	2-7	2-7	3.139	502
			10-5	27-4	>16 TO 22	14.5	16	10	6	5	6	5	4	4	4	4				2-7	2-7	9-0	2-11	2-11	3.561	523
			11-0.5	27-10	>22 TO 30	17.5	19	11.5	6	5	6	5	4	4	4	5				3-10	2-11	9-3	3-6	3-1	4.271	567
																					2-9	2-9	6-8	2-10	2-6	2.953

HEADWALL AND TOEWALL QUANTITIES

HEADWALL SKEW ANGLE	90° TO 75°			74° TO 60°			59° TO 45°		
	SPAN - S	Z	STIRRUPS	REBAR QUANT.	Z	STIRRUPS	REBAR QUANT.	Z	STIRRUPS
FT.	#	#	LBS./LIN.FT.	#	#	LBS./LIN.FT.	#	#	LBS./LIN.FT.
8	4	4	22.3	4	4	22.1	5	4	25.9
10	5	4	26.5	5	4	26.3	7	4	38.1
12	5	4	25.7	6	4	30.8	8	5	47.4
14	6	4	30.0	7	4	35.8	10	5	65.0
16	6	4	29.5	8	5	46.2	★	★	★
18	7	4	34.9	9	5	53.7	★	★	★
20	7	4	34.3	11	6	74.4	★	★	★

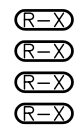
CONCRETE QUANTITY = 0.085 CU.YDS./LIN.FT.

NOTES

- QUANTITIES ARE PER LINEAR FOOT (OF HEADWALL) FOR ONE HEADWALL AND TOEWALL AND INCLUDE ALL HEADWALL AND TOEWALL REINFORCING STEEL. QUANTITY INCLUDED WAS CALCULATED PER 1 FT. STRIP. SKEW ANGLE MAY VARY. QUANTITIES SHALL BE PAID FOR AS SHOWN ON THE PLANS.
- ★ A SKEWED HEADWALL IS NOT RECOMMENDED FOR THESE SPANS. A SPECIAL DESIGN IS REQUIRED.
- FOR HEADWALL AND TOEWALL DETAILS SEE SHEET 1.
- WHEN THE FILL HEIGHT IS LESS THAN OR EQUAL TO 2 FT.-0 IN., ALL REINFORCING BARS IN THE HEADWALL, ALL REINFORCING BARS DESIGNATED BY AN ASTERISK (*), AND THE d₁ IN THE BARS IN THE TOP MAT OF THE TOP SLAB SHALL BE EPOXY COATED.
- REINFORCING QUANTITIES INCLUDE BOTH EPOXY-COATED AND UNCOATED BARS.
- WHEN AN R (RISE) OF LESS THAN 6 FT. IS REQUIRED, USE THE BAR SIZES AND THE SLAB AND WALL THICKNESSES FOR THE 6 FT. RISE (IF AVAILABLE ON THE TABLE).
- ▲ THE SIZE OF d₁ BARS IS #4. THE NUMBER OF BARS REQUIRED IS LISTED.

Computer File Information

Creation Date: 07/04/06	Initials: SJR
Last Modification Date: 07/04/06	Initials: LTA
Full Path: www.dot.state.co.us/DesignSupport/	
Drawing File Name: 601030202.dwg	
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English	



Sheet Revisions

Date:	Comments

Colorado Department of Transportation



4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820

Project Development Branch

SRJ/LTA

TRIPLE CONCRETE BOX CULVERT

Issued By: Project Development Branch on July 04, 2006

STANDARD PLAN NO.

M-601-3

Sheet No. 2 of 2