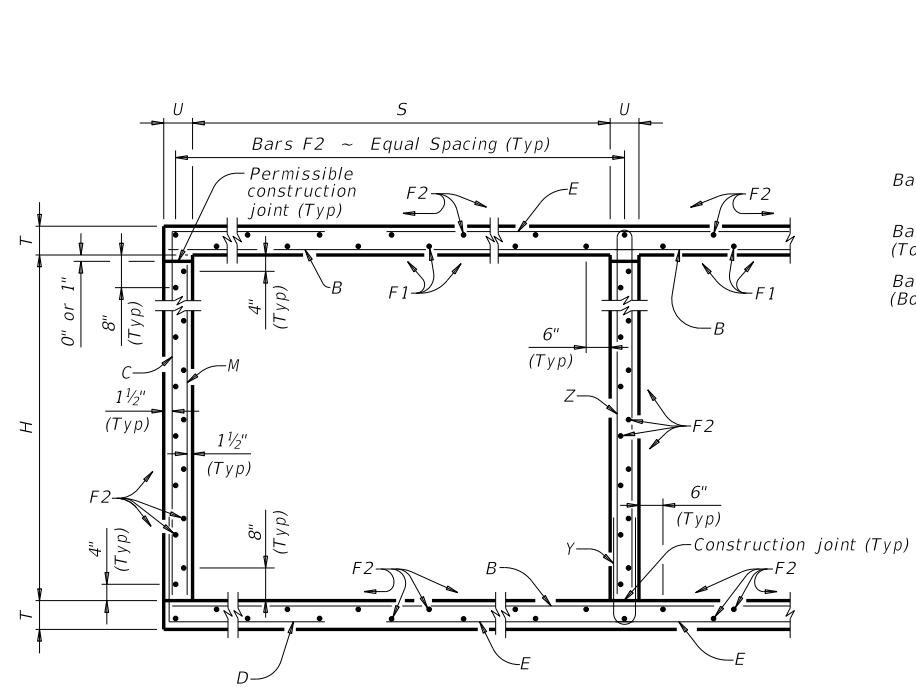
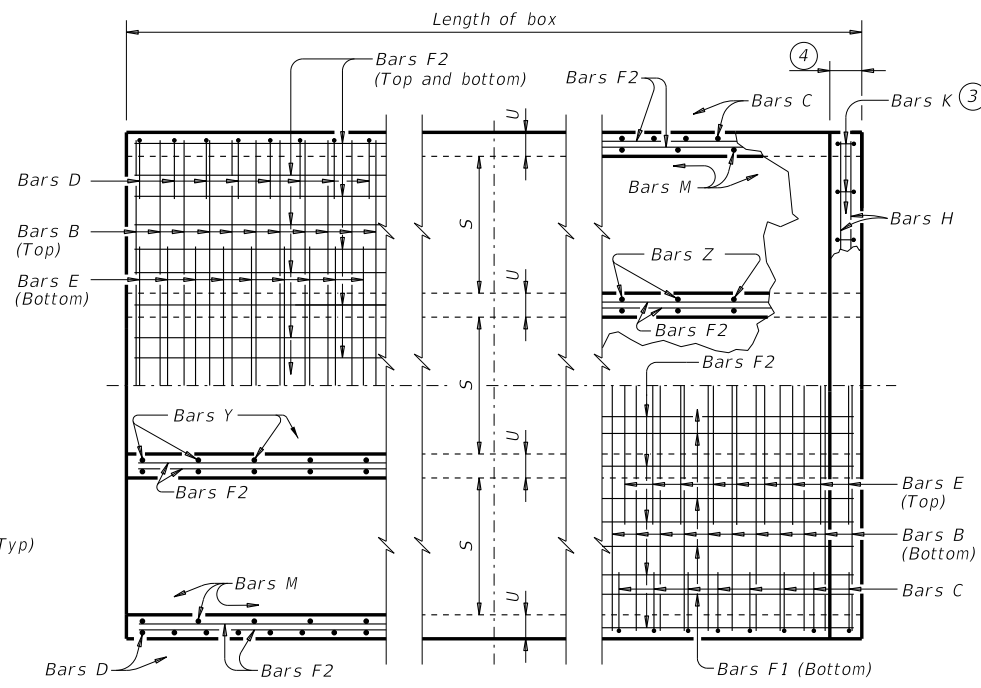


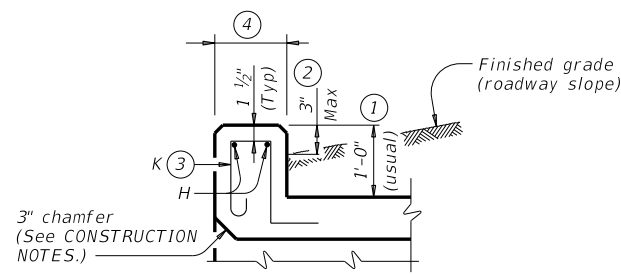
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TYPICAL SECTION

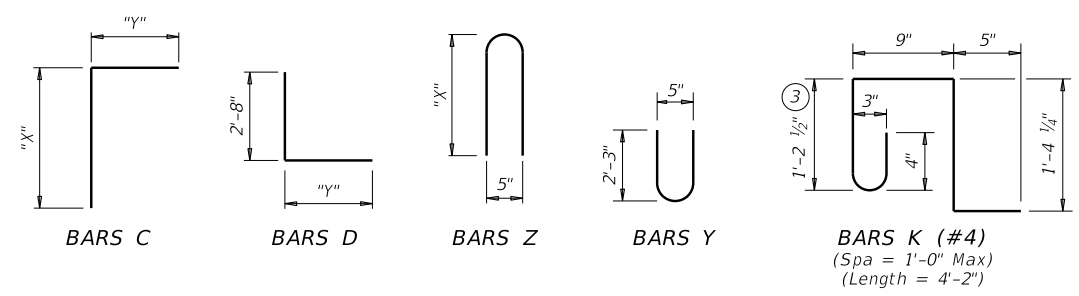


PART PLANS



SECTION THRU CURB

TABLE OF BAR DIMENSIONS		
H	"X"	"Y"
2'-0"	2'-7 1/2"	4'-1 1/2"
3'-0"	3'-7 1/2"	4'-1 1/2"
4'-0"	4'-7 1/2"	4'-1 1/2"
5'-0"	5'-7 1/2"	4'-1 1/2"
6'-0"	6'-7 1/2"	4'-1 1/2"



- 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
- For vehicle safety, the following requirements must be met:
 - For structures without bridge rail, construct curbs no more than 3" above finished grade.
 - For structures with bridge rail, construct curbs flush with finished grade. Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.
- 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR
 Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.
 If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86" Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

CONSTRUCTION NOTES:
 Do not use permanent forms.
 Chamfer the bottom edge of the top slab 3" at the entrance.
 Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed.

MATERIAL NOTES:
 Provide Grade 60 reinforcing steel.
 Provide galvanized reinforcing steel if required elsewhere in the plans.
 Provide Class C concrete (f'c = 3,600 psi) for culvert barrel and curb.
 Provide bar laps, where required, as follows:
 • Uncoated or galvanized ~ #4 = 1'-8" Min
 • Uncoated or galvanized ~ #5 = 2'-1" Min
 • Uncoated or galvanized ~ #6 = 2'-6" Min

GENERAL NOTES:
 Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
 See the Multiple Box Culverts Cast-In-Place Miscellaneous Detail (MC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

Cover dimensions are clear dimensions, unless noted otherwise.
 Reinforcing bar dimensions shown are out-to-out of bar.



**MULTIPLE BOX CULVERTS
 CAST-IN-PLACE
 6'-0" SPAN
 2' TO 23' FILL
 MC-6-23**


FILE: CD-MC623-20.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
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REVISIONS				
DIST	COUNTY			SHEET NO.

DATE:
FILE:

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DATE: FILE:

NUMBER OF SPANS	SECTION DIMENSIONS				BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																														QUANTITIES														
					Bars B				Bars C & D				Bars E			Bars F1 ~ #4			Bars F2 ~ #4			Bars M ~ #4			Bars Y & Z ~ #4				Bars H 4 ~ #4		Bars K		Per Foot of Barrel		Curb		Total												
	S	H	T	U	No.	Size	Spa	Length	Wt	No.	Size	Spa	Bars C		Bars D		No.	Size	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Spa	Length	Wt	No.	Spa	Length	Wt	Bars Y		Bars Z		Length	Wt	No.	Wt	Conc (CY)	Ref (Lb)	Conc (CY)	Ref (Lb)	Conc (CY)	Ref (Lb)		
													Length	Wt	Length	Wt																		Length	Wt	Length	Wt												
2	6'-0"	2'-0"	9"	8"	108	#6	9"	13'-9"	2,230	108	#5	9"	6'-9"	760	6'-10"	770	108	#6	9"	6'-10"	1,108	10	18"	39'-9"	266	44	18"	39'-9"	1,168	82	12"	2'-0"	110	41	12"	4'-10"	132	5'-6"	151	13'-9"	37	30	84	0.926	167.4	1.0	121	38.1	6,816
3	6'-0"	2'-0"	9"	8"	108	#6	9"	20'-5"	3,312	108	#5	9"	6'-9"	760	6'-10"	770	108	#6	9"	12'-10"	2,082	15	18"	39'-9"	398	63	18"	39'-9"	1,673	82	12"	2'-0"	110	82	12"	4'-10"	265	5'-6"	301	20'-5"	55	44	122	1.346	241.8	1.5	177	55.4	9,848
4	6'-0"	2'-0"	9"	8"	108	#6	9"	27'-1"	4,393	108	#5	9"	6'-9"	760	6'-10"	770	108	#6	9"	18'-10"	3,055	20	18"	39'-9"	531	82	18"	39'-9"	2,177	82	12"	2'-0"	110	123	12"	4'-10"	397	5'-6"	452	27'-1"	72	58	161	1.765	316.1	2.0	233	72.6	12,878
5	6'-0"	2'-0"	9"	8"	108	#6	9"	33'-9"	5,475	108	#5	9"	6'-9"	760	6'-10"	770	108	#6	9"	24'-10"	4,028	25	18"	39'-9"	664	101	18"	39'-9"	2,682	82	12"	2'-0"	110	164	12"	4'-10"	530	5'-6"	603	33'-9"	90	70	195	2.185	390.6	2.5	285	89.9	15,907
6	6'-0"	2'-0"	9"	8"	108	#6	9"	40'-5"	6,556	108	#5	9"	6'-9"	760	6'-10"	770	108	#6	9"	30'-10"	5,002	30	18"	39'-9"	797	120	18"	39'-9"	3,186	82	12"	2'-0"	110	205	12"	4'-10"	662	5'-6"	753	40'-5"	108	84	234	2.605	464.9	3.0	342	107.2	18,938
2	6'-0"	3'-0"	9"	8"	108	#6	9"	13'-9"	2,230	108	#5	9"	7'-9"	873	6'-10"	770	108	#6	9"	6'-10"	1,108	10	18"	39'-9"	266	50	18"	39'-9"	1,328	82	12"	3'-0"	164	41	12"	4'-10"	132	7'-6"	205	13'-9"	37	30	84	1.000	176.9	1.0	121	41.0	7,197
3	6'-0"	3'-0"	9"	8"	108	#6	9"	20'-5"	3,312	108	#5	9"	7'-9"	873	6'-10"	770	108	#6	9"	12'-10"	2,082	15	18"	39'-9"	398	71	18"	39'-9"	1,885	82	12"	3'-0"	164	82	12"	4'-10"	265	7'-6"	411	20'-5"	55	44	122	1.444	254.0	1.5	177	59.3	10,337
4	6'-0"	3'-0"	9"	8"	108	#6	9"	27'-1"	4,393	108	#5	9"	7'-9"	873	6'-10"	770	108	#6	9"	18'-10"	3,055	20	18"	39'-9"	531	92	18"	39'-9"	2,443	82	12"	3'-0"	164	123	12"	4'-10"	397	7'-6"	616	27'-1"	72	58	161	1.889	331.1	2.0	233	77.6	13,475
5	6'-0"	3'-0"	9"	8"	108	#6	9"	33'-9"	5,475	108	#5	9"	7'-9"	873	6'-10"	770	108	#6	9"	24'-10"	4,028	25	18"	39'-9"	664	113	18"	39'-9"	3,000	82	12"	3'-0"	164	164	12"	4'-10"	530	7'-6"	822	33'-9"	90	70	195	2.333	408.2	2.5	285	95.8	16,611
6	6'-0"	3'-0"	9"	8"	108	#6	9"	40'-5"	6,556	108	#5	9"	7'-9"	873	6'-10"	770	108	#6	9"	30'-10"	5,002	30	18"	39'-9"	797	134	18"	39'-9"	3,558	82	12"	3'-0"	164	205	12"	4'-10"	662	7'-6"	1,027	40'-5"	108	84	234	2.778	485.2	3.0	342	114.1	19,751
2	6'-0"	4'-0"	9"	8"	108	#6	9"	13'-9"	2,230	108	#5	9"	8'-9"	986	6'-10"	770	108	#6	9"	6'-10"	1,108	10	18"	39'-9"	266	50	18"	39'-9"	1,328	82	12"	4'-0"	219	41	12"	4'-10"	132	9'-6"	260	13'-9"	37	30	84	1.074	182.5	1.0	121	44.0	7,420
3	6'-0"	4'-0"	9"	8"	108	#6	9"	20'-5"	3,312	108	#5	9"	8'-9"	986	6'-10"	770	108	#6	9"	12'-10"	2,082	15	18"	39'-9"	398	71	18"	39'-9"	1,885	82	12"	4'-0"	219	82	12"	4'-10"	265	9'-6"	520	20'-5"	55	44	122	1.543	260.9	1.5	177	63.2	10,614
4	6'-0"	4'-0"	9"	8"	108	#6	9"	27'-1"	4,393	108	#5	9"	8'-9"	986	6'-10"	770	108	#6	9"	18'-10"	3,055	20	18"	39'-9"	531	92	18"	39'-9"	2,443	82	12"	4'-0"	219	123	12"	4'-10"	397	9'-6"	781	27'-1"	72	58	161	2.012	339.4	2.0	233	82.5	13,808
5	6'-0"	4'-0"	9"	8"	108	#6	9"	33'-9"	5,475	108	#5	9"	8'-9"	986	6'-10"	770	108	#6	9"	24'-10"	4,028	25	18"	39'-9"	664	113	18"	39'-9"	3,000	82	12"	4'-0"	219	164	12"	4'-10"	530	9'-6"	1,041	33'-9"	90	70	195	2.481	417.8	2.5	285	101.7	16,998
6	6'-0"	4'-0"	9"	8"	108	#6	9"	40'-5"	6,556	108	#5	9"	8'-9"	986	6'-10"	770	108	#6	9"	30'-10"	5,002	30	18"	39'-9"	797	134	18"	39'-9"	3,558	82	12"	4'-0"	219	205	12"	4'-10"	662	9'-6"	1,301	40'-5"	108	84	234	2.951	496.3	3.0	342	121.0	20,193
2	6'-0"	5'-0"	9"	8"	108	#6	9"	13'-9"	2,230	108	#5	9"	9'-9"	1,098	6'-10"	770	108	#6	9"	6'-10"	1,108	10	18"	39'-9"	266	56	18"	39'-9"	1,487	82	12"	5'-0"	274	41	12"	4'-10"	132	11'-6"	315	13'-9"	37	30	84	1.148	192.0	1.0	121	47.0	7,801
3	6'-0"	5'-0"	9"	8"	108	#6	9"	20'-5"	3,312	108	#5	9"	9'-9"	1,098	6'-10"	770	108	#6	9"	12'-10"	2,082	15	18"	39'-9"	398	79	18"	39'-9"	2,098	82	12"	5'-0"	274	82	12"	4'-10"	265	11'-6"	630	20'-5"	55	44	122	1.642	273.2	1.5	177	67.2	11,104
4	6'-0"	5'-0"	9"	8"	108	#6	9"	27'-1"	4,393	108	#5	9"	9'-9"	1,098	6'-10"	770	108	#6	9"	18'-10"	3,055	20	18"	39'-9"	531	102	18"	39'-9"	2,708	82	12"	5'-0"	274	123	12"	4'-10"	397	11'-6"	945	27'-1"	72	58	161	2.136	354.3	2.0	233	87.5	14,404
5	6'-0"	5'-0"	9"	8"	108	#6	9"	33'-9"	5,475	108	#5	9"	9'-9"	1,098	6'-10"	770	108	#6	9"	24'-10"	4,028	25	18"	39'-9"	664	125	18"	39'-9"	3,319	82	12"	5'-0"	274	164	12"	4'-10"	530	11'-6"	1,260	33'-9"	90	70	195	2.630	435.5	2.5	285	107.7	17,703
6	6'-0"	5'-0"	9"	8"	108	#6	9"	40'-5"	6,556	108	#5	9"	9'-9"	1,098	6'-10"	770	108	#6	9"	30'-10"	5,002	30	18"	39'-9"	797	148	18"	39'-9"	3,930	82	12"	5'-0"	274	205	12"	4'-10"	662	11'-6"	1,575	40'-5"	108	84	234	3.123	516.6	3.0	342	127.9	21,006
2	6'-0"	6'-0"	9"	8"	108	#6	9"	13'-9"	2,230	108	#5	9"	10'-9"	1,211	6'-10"	770	108	#6	9"	6'-10"	1,108	10	18"	39'-9"	266	62	18"	39'-9"	1,646	82	12"	6'-0"	329	41	12"	4'-10"	132	13'-6"	370	13'-9"	37	30	84	1.222	201.6	1.0	121	49.9	8,183
3	6'-0"	6'-0"	9"	8"	108	#6	9"	20'-5"	3,312	108	#5	9"	10'-9"	1,211	6'-10"	770	108	#6	9"	12'-10"	2,082	15	18"	39'-9"	398	87	18"	39'-9"	2,310	82	12"	6'-0"	329	82	12"	4'-10"	265	13'-6"	739	20'-5"	55	44	122	1.741	285.4	1.5	177	71.2	11,593
4	6'-0"	6'-0"	9"	8"	108	#6	9"	27'-1"	4,393	108	#5	9"	10'-9"	1,211	6'-10"	770	108	#6	9"	18'-10"	3,055	20	18"	39'-9"	531	112	18"	39'-9"	2,974	82	12"	6'-0"	329	123	12"	4'-10"	397	13'-6"	1,109	27'-1"	72	58	161	2.259	369.2	2.0	233	92.4	15,002
5	6'-0"	6'-0"	9"	8"	108	#6	9"	33'-9"	5,475	108	#5	9"	10'-9"	1,211	6'-10"	770	108	#6	9"	24'-10"	4,028	25	18"	39'-9"	664	137	18"	39'-9"	3,638	82	12"	6'-0"	329	164	12"	4'-10"	530	13'-6"	1,479	33'-9"	90	70	195	2.778	453.1	2.5	285	113.6	18,409
6	6'-0"	6'-0"	9"	8"	108	#6	9"	40'-5"	6,556	108	#5	9"	10'-9"	1,211	6'-10"	770	108	#6	9"	30'-10"	5,002	30	18"	39'-9"	797	162	18"	39'-9"	4,302	82	12"	6'-0"	329	205	12"	4'-10"	662	13'-6"	1,849	40'-5"	108	84	234	3.296	537.0	3.0	342	134.8	21,820

 Texas Department of Transportation		Bridge Division Standard	
MULTIPLE BOX CULVERTS CAST-IN-PLACE 6'-0" SPAN 2' TO 23' FILL MC-6-23			
FILE: CD-MC623-20.dgn	DN: TBE	CK: BMP	DW: TxDOT
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