Variable Dimensions and Quantities for Triple 10' x 9' Barrel Sections

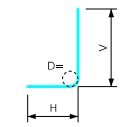
Dimensions													
Fill	S	H	A	B	C	D	E	R	T	U	W	X	Z
0	10	9	13	11	9	6	9	0'-0	0'-0	6'-2	2'-5	4'-2	4'-1
1	10	9	12.5	10.5	9	6	9	0'-10	0'-2	6'-2	2'-4	3'-8	3'-11
2	10	9	9	10	9	6	9	2'-1	1'-8	6'-3	2'-2	4'-2	3'-8
3-6	10	9	8	10	9	9	9	2'-8	1'-6	4'-6	2'-2	4'-1	3'-5
7-8	10	9	8	10	9	9	9	2'-10	2'-1	3'-6	3'-0	4'-2	3'-6
9-10	10	9	9	11	9	9	9	3'-2	1'-10	3'-5	2'-9	4'-2	3'-5
11-12	10	9	9.5	12	9	9	9	4'-2	2'-6	3'-5	2'-5	4'-2	3'-3
13-15	10	9	11.5	14	9	9	9	3'-5	1'-7	3'-3	2'-2	3'-6	3'-5
16-17	10	9	12.5	15	9.5	9	6	4'-2	2'-1	3'-3	2'-0	3'-5	3'-5
18-19	10	9	13.5	15.5	10	9	9	3'-4	1'-11	3'-4	2'-0	3'-5	3'-5
20-21	10	9	14.5	16.5	10.5	9	9	3'-3	1'-8	3'-5	1'-9	3'-4	3'-6
22-23	10	9	15.5	17.5	11	9	9	3'-3	1'-4	3'-6	1'-5	3'-3	3'-7
24-25	10	9	16.5	18.5	11.5	9	9	3'-1	1'-2	3'-7	1'-3	3'-11	3'-8

Bar List																																															
	a1			a2			b1			b2			e1			e2			f1			f2			k1			k2			k3			k4				k6			k7		
Fill	Size	Sp.	L	Size	Sp.	L	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	H	V	Size	Sp.	L	Size	Sp.	L
0	4	6	10'-11	6	9	10'-11	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	6	18	32'-8	5	18	10'-11	4	18	10'-9	4	6	9'-7	6'-5	3'-2	4	12	32'-8	4	12	12'-4
1	4	6	10'-10	6	9	10'-10	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	6	18	32'-8	5	18	10'-9	4	18	9'-1	4	6	9'-6	6'-5	3'-1	4	12	32'-8	4	12	12'-4
2	4	6	10'-6	6	9	10'-6	4	6	36	4	6	38	5	12	27	4	18	24	4	12	33	4	18	24	5	9	32'-8	4	9	8'-3	4	9	6'-7	6	9	8'-9	5'-2	3'-7	5	18	32'-8	7	18	13'-0
3-6	4	12	10'-5	6	9	10'-5	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	12	32'-8	5	12	8'-7	4	12	5'-5	6	9	7'-10	4'-4	3'-6	4	12	32'-8	6	12	9'-6
7-8	4	12	10'-5	6	9	10'-5	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	12	32'-8	5	12	7'-7	4	12	5'-1	5	6	6'-10	3'-5	3'-5	5	12	32'-8	6	12	7'-2
9-10	4	12	10'-7	6	9	10'-7	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	12	32'-8	5	12	8'-3	4	12	4'-5	5	6	6'-6	3'-3	3'-3	5	12	32'-8	6	12	7'-0
11-12	4	12	10'-8	6	9	10'-8	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	9	32'-8	4	9	7'-0	4	9	2'-5	5	6	6'-6	3'-3	3'-3	4	12	32'-8	7	12	7'-1
13-15	4	12	11'-0	6	9	11'-0	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	12	32'-8	5	12	8'-10	4	12	3'-11	6	9	7'-1	3'-3	3'-10	5	12	32'-8	6	12	6'-10
16-17	4	12	11'-2	5	6	11'-2	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	9	32'-10	4	9	8'-2	4	9	2'-6	6	9	7'-2	3'-3	3'-11	5	12	32'-10	6	12	6'-11
18-19	4	9	11'-4	7	9	11'-4	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	9	33'-0	4	9	8'-6	4	9	4'-2	6	9	7'-3	3'-4	3'-11	5	12	33'-0	6	12	7'-1
20-21	4	12	11'-6	7	9	11'-6	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	9	33'-2	4	9	9'-0	4	9	4'-4	5	6	7'-2	3'-7	3'-7	5	12	33'-2	6	12	7'-3
22-23	4	9	11'-8	7	9	11'-8	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	9	33'-4	4	9	9'-8	4	9	4'-5	6	9	7'-6	3'-5	4'-1	5	12	33'-4	6	12	7'-5
24-25	4	12	11'-10	7	9	11'-10	4	6	36	4	6	38	4	12	27	4	18	24	4	12	33	4	18	24	5	9	33'-6	4	9	10'-1	4	9	4'-10	5	6	7'-6	3'-9	3'-9	5	12	33'-6	6	12	7'-7

Bar List																																															
	k9			m1			m2			m3			m4					m6			m7			m9			Quantities				
																											Concrete (CY/FT)				Steel (LB/FT)
Fill	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	H	V	Size	Sp.	L	Size	Sp.	L	Size	Sp.	L	Slab	Floor	Walls	Total	
0	4	4.5	32'-8	5	12	33'-2	4	12	7'-2	4	12	2'-5	4	6	17'-10	8'-6	9'-4	5	18	33'-2	7	18	8'-1	7	4.5	33'-2	1.405	1.219	0.952	3.576	462.08
1	4	4.5	32'-8	4	9	33'-2	4	9	7'-6	4	9	3'-5	4	6	15'-6	6'-2	9'-4	5	18	33'-2	7	18	7'-10	7	4.5	33'-2	1.354	1.167	0.952	3.473	451.97
2	7	4.5	32'-8	5	12	33'-2	5	12	7'-8	4	12	2'-5	5	9	13'-11	4'-8	9'-3	4	12	33'-2	6	12	7'-6	6	4.5	33'-2	0.998	1.115	0.952	3.065	510.26
3-6	6	4.5	32'-8	5	12	33'-2	5	12	7'-7	4	12	2'-7	6	9	13'-4	4'-1	9'-3	4	9	33'-2	5	9	7'-0	5	4.5	33'-2	0.896	1.115	0.952	2.963	480.63
7-8	6	4.5	32'-8	5	9	33'-2	4	9	5'-11	4	9	2'-5	5	6	12'-8	3'-5	9'-3	4	12	33'-2	7	12	7'-1	7	4.5	33'-2	0.896	1.115	0.952	2.963	489.29
9-10	6	4.5	32'-8	5	9	33'-2	4	9	6'-7	4	9	2'-5	5	6	12'-7	3'-3	9'-4	4	12	33'-2	7	12	7'-0	7	4.5	33'-2	0.998	1.219	0.952	3.169	489.63
11-12	7	4.5	32'-8	5	9	33'-2	4	9	7'-4	4	9	2'-5	5	6	12'-8	3'-3	9'-5	5	12	33'-2	6	12	6'-9	6	4.5	33'-2	1.049	1.322	0.952	3.323	496.97
13-15	6	4.5	32'-8	5	9	33'-2	4	9	8'-2	4	9	3'-9	6	9	12'-11	3'-4	9'-7	5	18	33'-2	8	18	7'-3	8	4.5	33'-2	1.252	1.529	0.952	3.733	499.89
16-17	6	4.5	32'-10	5	9	33'-4	4	9	8'-6	4	9	4'-0	6	9	13'-0	3'-4	9'-8	5	18	33'-4	8	18	7'-3	8	4.5	33'-4	1.364	1.642	1.004	4.010	511.66
18-19	6	4.5	33'-0	6	12	33'-6	5	12	8'-6	4	12	4'-0	6	9	13'-1	3'-4	9'-9	5	12	33'-6	6	12	7'-2	6	4.5	33'-6	1.476	1.704	1.057	4.237	546.26
20-21	6	4.5	33'-2	6	12	33'-8	5	12	8'-11	4	12	4'-2	5	6	13'-3	3'-5	9'-10	5	12	33'-8	6	12	7'-5	6	4.5	33'-8	1.589	1.816	1.113	4.518	547.71
22-23	6	4.5	33'-4	6	12	33'-10	5	12	9'-9	4	12	4'-5	6	9	13'-5	3'-6	9'-11	5	12	33'-10	6	12	7'-7	6	4.5	33'-10	1.703	1.932	1.166	4.801	560.00
24-25	6	4.5	33'-6	6	12	34'-0	5	12	10'-1	4	12	3'-2	5	6	13'-7	3'-7	10'-0	4	12	34'-0	7	12	7'-9	7	4.5	34'-0	1.818	2.049	1.218	5.085	558.00

Bent Bar Detail

Bars	D
4	3"
5	3¾"
6	4½"



k4 & m4

Note:
All dimensions are out to out.
D = pin diameter.

Notes:

1. Dimensions listed on this sheet to be used in conjunction with Sheet TRRCB G3-20.
2. Fill, dimensions "S" and "H" are in feet.
3. Dimensions "A", "B", "C", "D", and "Sp." listed in the bar list are in inches.
4. Dimensions "L", "H", "V" are in feet and inches.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

IOWADOT Highway Division

Standard Design

Triple Reinforced Concrete Box Culverts

July, 2020

Culvert Barrel Details

10' x 9' Barrel Sections

TRRCB 10-9-20

Sheet 2 of 2

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