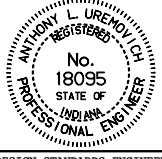


STEEL STRUCTURAL PLATE PIPE-ARCH										
SPAN	RISE	H	R	S	SINGLE PIPE		DOUBLE PIPE		TRIPLE PIPE	
					G	CU.YDS. CONC. 2 ANCHORS	G	CU.YDS. CONC. 2 ANCHORS	G	CU.YDS. CONC. 2 ANCHORS
6'-1	4'-7	3'-11	3'-7 $\frac{1}{2}$	9'-6	7'-5	3.5	16'-11	8.4	26'-5	13.3
6'-4	4'-9	3'-11	3'-10	9'-10	7'-8	3.6	17'-5	8.6	27'-4	13.6
6'-9	4'-11	4'-0	4'-0 $\frac{1}{2}$	10'-6	8'-1	3.8	18'-7	9.3	29'-1	14.8
7'-0	5'-1	4'-0	4'-2	10'-10	8'-4	3.9	19'-2	9.5	30'-0	15.1
7'-3	5'-3	3'-11	4'-3 $\frac{1}{2}$	11'-3	8'-7	4.0	19'-10	9.7	31'-1	15.4
7'-8	5'-5	4'-0	4'-6	11'-10	9'-0	4.2	20'-10	10.4	32'-8	16.5
7'-11	5'-7	4'-0	4'-7 $\frac{1}{2}$	12'-3	9'-3	4.3	21'-6	10.6	33'-9	16.9
8'-2	5'-9	3'-11	4'-9	12'-6	9'-6	4.4	22'-0	10.7	34'-6	17.0
8'-7	5'-11	4'-1	4'-11 $\frac{1}{2}$	12'-11	9'-11	4.6	22'-10	11.3	35'-9	18.0
8'-10	6'-1	4'-0	5'-1	13'-2	10'-2	4.7	23'-4	11.4	36'-6	18.1
9'-4	6'-3	4'-2	5'-4	13'-8	10'-8	5.0	24'-4	12.1	38'-0	19.3
9'-6	6'-5	4'-1	5'-5	13'-10	10'-10	5.0	24'-8	12.1	38'-6	19.2
9'-9	6'-7	4'-0	5'-6 $\frac{1}{2}$	14'-1	11'-1	5.1	25'-2	12.1	39'-3	19.2
10'-3	6'-9	4'-2	5'-9 $\frac{1}{2}$	14'-7	11'-7	5.4	26'-2	12.9	40'-9	20.4
10'-8	6'-11	4'-4	6'-0	15'-0	12'-0	5.8	27'-0	13.7	42'-0	21.6
10'-11	7'-1	4'-3	6'-1 $\frac{1}{2}$	15'-3	12'-3	5.8	27'-6	13.7	42'-9	21.6
11'-5	7'-3	4'-6	6'-4 $\frac{1}{2}$	15'-9	12'-9	6.2	28'-6	14.6	44'-3	23.0
11'-7	7'-5	4'-5	6'-5 $\frac{1}{2}$	15'-11	12'-11	6.2	28'-10	14.5	44'-9	22.9
11'-10	7'-7	4'-3	6'-7	16'-2	13'-2	6.2	29'-4	14.5	45'-6	22.8
12'-4	7'-9	4'-6	6'-10	16'-8	13'-8	6.6	30'-4	15.4	47'-0	24.3
12'-6	7'-11	4'-4	6'-11	16'-10	13'-10	6.6	30'-8	15.3	47'-6	24.0
12'-8	8'-1	4'-3	7'-0	17'-0	14'-0	6.5	31'-0	15.2	48'-0	23.8
12'-10	8'-4	4'-2	7'-1	17'-2	14'-2	6.5	31'-4	15.1	48'-6	23.7
13'-3	9'-4	5'-0	7'-3 $\frac{1}{2}$	17'-7	14'-7	7.3	32'-2	17.1	49'-9	26.9
13'-6	9'-6	5'-0	7'-5	17'-10	14'-10	7.4	32'-8	17.2	50'-6	27.0
14'-0	9'-8	5'-0	7'-8	18'-4	15'-4	7.7	33'-8	17.9	52'-0	28.1
14'-2	9'-10	5'-0	7'-9	18'-6	15'-6	7.7	34'-0	17.9	52'-6	28.1
14'-5	10'-0	5'-0	7'-10 $\frac{1}{2}$	18'-9	15'-9	7.8	34'-6	18.0	53'-3	28.2
14'-11	10'-2	5'-2	8'-1 $\frac{1}{2}$	19'-3	16'-3	8.2	35'-6	18.9	54'-9	29.6
15'-4	10'-4	5'-2	8'-4	19'-8	16'-8	8.6	36'-4	19.6	56'-0	30.7
15'-7	10'-6	5'-2	8'-5 $\frac{1}{2}$	19'-11	16'-11	8.6	36'-10	19.7	56'-9	30.8
15'-10	10'-8	5'-2	8'-7	20'-2	17'-2	8.6	37'-4	19.7	57'-6	30.9
16'-3	10'-10	5'-2	8'-9 $\frac{1}{2}$	20'-7	17'-7	9.0	38'-2	20.5	58'-9	32.0
16'-6	11'-0	5'-5	8'-11	20'-10	17'-10	9.1	38'-8	20.7	59'-6	32.4
17'-0	11'-2	5'-5	9'-2	21'-4	18'-4	9.5	39'-8	21.6	61'-0	33.7
17'-2	11'-4	5'-5	9'-3	21'-6	18'-6	9.5	40'-0	21.5	61'-6	33.6
17'-5	11'-6	5'-5	9'-4 $\frac{1}{2}$	21'-9	18'-9	9.5	40'-6	21.6	62'-3	33.7
17'-11	11'-8	5'-5	9'-7 $\frac{1}{2}$	22'-3	19'-3	9.9	41'-6	22.5	63'-9	35.0
18'-1	11'-10	5'-6	9'-8 $\frac{1}{2}$	22'-5	19'-5	9.9	41'-10	22.7	64'-3	35.4
18'-7	12'-0	5'-6	9'-11 $\frac{1}{2}$	22'-11	19'-11	10.3	42'-10	23.4	65'-9	36.7
18'-9	12'-2	5'-6	10'-0 $\frac{1}{2}$	23'-1	20'-1	10.3	43'-2	23.6	66'-3	36.7
19'-3	12'-4	5'-6	10'-3 $\frac{1}{2}$	23'-7	20'-7	10.8	44'-2	24.6	67'-9	38.8
19'-6	12'-6	5'-6	10'-5	23'-10	20'-10	10.8	44'-8	24.6	68'-6	38.2
19'-8	12'-8	5'-6	10'-6	24'-0	21'-0	10.7	45'-0	24.4	69'-0	37.9
19'-11	12'-10	5'-6	10'-7 $\frac{1}{2}$	24'-3	21'-3	10.7	45'-6	24.2	69'-9	37.7
20'-5	13'-0	5'-6	10'-10 $\frac{1}{2}$	24'-9	21'-9	11.2	46'-5	25.4	71'-3	39.4
20'-7	13'-2	5'-6	10'-11 $\frac{1}{2}$	24'-11	21'-11	11.1	46'-10	25.3	71'-9	39.5

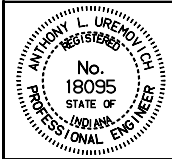
INDIANA DEPARTMENT OF TRANSPORTATION	
<b>CONCRETE ANCHOR TABLES</b>	
JANUARY 1998	
<b>STANDARD DRAWING NO. E 717-ANCH-01</b>	
	DETAILS PLACED IN THIS FORMAT 11-15-99  /s/ Anthony L. Uremovich 11-15-99 DESIGN STANDARDS ENGINEER DATE
DESIGN STANDARDS ENGINEER	/s/ Firooz Zandi 11-15-99 CHIEF HIGHWAY ENGINEER DATE ORIGINALLY APPROVED 1-02-98

**STEEL OR ALUMINUM ALLOY STRUCTURAL PLATE PIPE**

D	H	R	S	SINGLE PIPE		DOUBLE PIPE		TRIPLE PIPE	
				G	CU.YDS. CONC. 2 ANCHORS	G	CU.YDS. CONC. 2 ANCHORS	G	CU.YDS. CONC. 2 ANCHORS
5'-0	3'-5	3'-2	7'-10	6'-4	3.1	14'-2	7.1	22'-0	11.0
5'-6	3'-7	3'-5	8'-7	6'-10	3.4	15'-5	7.9	24'-0	12.4
6'-0	3'-8	3'-8	9'-4	7'-4	3.7	16'-8	8.6	26'-0	13.6
6'-6	3'-10	3'-11	10'-1	7'-10	4.1	17'-11	9.5	28'-0	15.0
7'-0	3'-11	4'-2	10'-10	8'-4	4.3	19'-2	10.3	30'-0	16.2
7'-6	4'-1	4'-5	11'-7	8'-10	4.7	20'-5	11.3	32'-0	17.8
8'-0	4'-2	4'-8	12'-4	9'-4	5.0	21'-8	12.1	34'-0	19.1
8'-6	4'-4	4'-11	12'-10	9'-10	5.4	22'-8	12.9	35'-6	20.4
9'-0	4'-5	5'-2	13'-4	10'-4	5.7	23'-8	13.5	37'-0	21.4
9'-6	4'-7	5'-5	13'-10	10'-10	6.1	24'-8	14.4	38'-6	22.7
10'-0	4'-8	5'-8	14'-4	11'-4	6.4	25'-8	15.1	40'-0	23.7
10'-6	4'-10	5'-11	14'-10	11'-10	6.8	26'-8	16.0	41'-6	25.2
11'-0	4'-11	6'-2	15'-4	12'-4	7.2	27'-8	16.7	43'-0	26.2
11'-6	5'-1	6'-5	15'-10	12'-10	7.6	28'-8	17.6	44'-6	27.7
12'-0	5'-2	6'-8	16'-4	13'-4	7.9	29'-8	18.3	46'-0	28.7
12'-6	5'-4	6'-11	16'-10	13'-10	8.4	30'-8	19.3	47'-6	30.3
13'-0	5'-5	7'-2	17'-4	14'-4	8.7	31'-8	20.0	49'-0	31.3
13'-6	5'-7	7'-5	17'-10	14'-10	9.2	32'-8	21.1	50'-6	32.9
14'-0	5'-8	7'-8	18'-4	15'-4	9.6	33'-8	21.8	52'-0	34.0
14'-6	5'-10	7'-11	18'-10	15'-10	10.1	34'-8	22.9	53'-6	35.7
15'-0	5'-11	8'-2	19'-4	16'-4	10.4	35'-8	23.6	55'-0	36.8
15'-6	6'-1	8'-5	19'-10	16'-10	10.9	36'-8	24.7	56'-6	38.5
16'-0	6'-2	8'-8	20'-4	17'-4	11.3	37'-8	25.5	58'-0	39.7
16'-6	6'-4	8'-11	20'-10	17'-10	11.9	38'-8	26.7	59'-0	41.5
17'-0	6'-5	9'-2	21'-4	18'-4	12.3	39'-8	27.5	61'-0	42.7
17'-6	6'-7	9'-5	21'-10	18'-10	12.8	40'-8	28.6	62'-6	44.5
18'-0	6'-8	9'-8	22'-4	19'-4	13.2	41'-8	29.5	64'-0	45.7
18'-6	6'-10	9'-11	22'-10	19'-10	13.8	42'-8	30.7	65'-6	47.6
19'-0	6'-11	10'-2	23'-4	20'-4	14.2	43'-8	31.5	67'-0	48.8
19'-6	7'-1	10'-5	23'-10	20'-10	14.8	44'-8	32.8	68'-6	50.8
20'-0	7'-2	10'-8	24'-4	21'-4	15.2	45'-8	33.6	70'-0	52.1
20'-6	7'-4	10'-11	24'-10	21'-10	15.8	46'-8	34.9	71'-6	54.2
21'-0	7'-5	11'-2	25'-4	22'-4	16.2	47'-8	35.8	73'-0	55.6

**GENERAL NOTES**

1. Refer to Standard Drawing E 717-SPCA-01 for single pipe anchor details.
2. Refer to Standard Drawings E 717-MPCA-01 and E 717-MPCA-02 for multiple pipe anchor details.

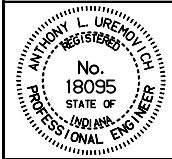
INDIANA DEPARTMENT OF TRANSPORTATION	
<b>CONCRETE ANCHOR</b>	
<b>TABLES</b>	
JANUARY 1998	
<b>STANDARD DRAWING NO. E 717-ANCH-02</b>	
	DETAILS PLACED IN THIS FORMAT 11-15-99  /s/ Anthony L. Uremovich 11-15-99 DESIGN STANDARDS ENGINEER DATE
DESIGN STANDARDS ENGINEER	/s/ Firooz Zandi 11-15-99 CHIEF HIGHWAY ENGINEER DATE ORIGINALLY APPROVED 1-02-98

**ALUMINUM ALLOY STRUCTURAL PLATE PIPE-ARCH**

SPAN	RISE	H	R	S	SINGLE PIPE		DOUBLE PIPE		TRIPLE PIPE	
					G	CU.YDS. CONC. 2 ANCHORS	G	m <sup>3</sup> CONC., 2 ANCHORS	G	m <sup>3</sup> CONC., 2 ANCHORS
6'-7	5'-8	5'-0	4'-0	10'-4	8'-0	4.2	18'-4	10.3	28'-8	16.4
6'-11	5'-9	5'-0	4'-2	10'-10	8'-4	4.3	19'-2	10.7	30'-0	17.1
7'-3	5'-11	5'-0	4'-4	11'-4	8'-8	4.4	20'-0	11.1	31'-4	17.7
7'-9	6'-0	5'-0	4'-7	12'-1	9'-2	4.8	21'-3	11.9	33'-4	19.1
8'-1	6'-1	5'-0	4'-9	12'-6	9'-6	4.9	22'-0	12.2	34'-6	19.6
8'-5	6'-3	5'-2	4'-11	12'-10	9'-10	5.0	22'-8	12.6	35'-6	20.1
8'-10	6'-4	5'-2	5'-1 1/2	13'-3	10'-3	5.3	23'-6	13.2	36'-9	21.1
9'-3	6'-5	5'-2	5'-4	13'-8	10'-8	5.5	24'-4	13.5	38'-0	21.6
9'-7	6'-6	5'-2	5'-6	14'-0	11'-0	5.6	25'-0	13.7	39'-0	21.9
9'-11	6'-8	5'-2	5'-8	14'-4	11'-4	5.7	25'-8	13.9	40'-0	22.2
10'-3	6'-9	5'-2	5'-10	14'-8	11'-8	5.8	26'-4	14.1	41'-0	22.4
10'-9	6'-10	5'-5	6'-1	15'-2	12'-2	6.3	27'-4	15.2	42'-6	24.2
11'-1	7'-0	5'-5	6'-3	15'-6	12'-6	6.4	28'-0	15.4	43'-6	24.4
11'-5	7'-1	5'-5	6'-5	15'-10	12'-10	6.4	28'-8	15.5	44'-6	24.6
11'-9	7'-2	5'-5	6'-7	16'-2	13'-2	6.5	29'-4	15.7	45'-6	24.8
12'-3	7'-3	5'-6	6'-10	16'-8	13'-8	7.1	30'-4	16.8	47'-0	26.6
12'-7	7'-5	5'-6	7'-0	17'-0	14'-0	7.1	31'-0	16.9	48'-0	26.8
12'-11	7'-6	5'-6	7'-2	17'-4	14'-4	7.2	31'-8	17.1	49'-0	26.9
13'-1	8'-2	5'-6	7'-3	17'-6	14'-6	7.7	32'-0	18.1	49'-6	28.5
13'-1	8'-4	5'-6	7'-3	17'-6	14'-6	7.2	32'-0	17.1	49'-6	26.9
13'-11	8'-5	5'-9	7'-8	18'-4	15'-4	8.5	33'-8	19.7	52'-0	31.0
14'-0	8'-7	5'-9	7'-8 1/2	18'-5	15'-5	7.9	33'-10	18.7	52'-3	29.4
13'-11	9'-5	5'-9	7'-8	18'-4	15'-4	8.2	33'-8	19.2	52'-0	30.2
14'-3	9'-7	5'-9	7'-10	18'-8	15'-8	8.3	34'-4	19.4	53'-0	30.5
14'-8	9'-8	5'-9	8'-0 1/2	19'-1	16'-1	8.6	35'-2	20.1	54'-3	31.5
14'-11	9'-10	5'-9	8'-2	19'-4	16'-4	8.7	35'-8	20.2	55'-0	31.7
15'-4	10'-0	6'-0	8'-4 1/2	19'-9	16'-9	9.1	36'-6	21.1	56'-3	33.1
15'-7	10'-2	6'-0	8'-6	20'-0	17'-0	9.1	37'-0	21.2	57'-0	33.2
16'-1	10'-4	6'-0	8'-9	20'-6	17'-6	9.6	38'-0	22.1	58'-6	34.5
16'-4	10'-6	6'-0	8'-10 1/2	20'-9	17'-9	9.6	38'-6	22.1	59'-3	34.6
16'-9	10'-8	6'-0	9'-1	21'-2	18'-2	10.0	39'-4	22.9	60'-6	35.8
17'-0	10'-10	6'-0	9'-2 1/2	21'-5	18'-5	10.0	39'-10	22.9	61'-3	35.9
17'-3	11'-0	6'-0	9'-4	21'-8	18'-8	10.0	40'-4	23.0	62'-0	35.9
17'-9	11'-2	6'-0	9'-7	22'-2	19'-2	10.5	41'-4	24.1	63'-6	37.7
18'-0	11'-4	6'-3	9'-8 1/2	22'-5	19'-5	10.6	41'-10	24.3	64'-3	38.0
18'-5	11'-6	6'-3	9'-11	22'-10	19'-10	11.0	42'-8	25.2	65'-6	39.5
18'-8	11'-8	6'-3	10'-0 1/2	23'-1	20'-1	11.0	43'-2	25.2	66'-3	39.4
19'-2	11'-9	6'-3	10'-3 1/2	23'-7	20'-7	11.5	44'-2	26.1	67'-9	40.7
19'-5	11'-11	6'-3	10'-5	23'-10	20'-10	11.5	44'-8	26.2	68'-6	40.9
19'-10	12'-1	6'-3	10'-7 1/2	24'-3	21'-3	12.0	45'-6	27.2	69'-9	42.5
20'-1	12'-3	6'-3	10'-9	24'-6	21'-6	12.0	46'-0	27.1	70'-6	42.3
20'-1	12'-6	6'-3	10'-9	24'-6	21'-6	11.4	46'-0	25.8	70'-6	40.1
20'-10	12'-7	6'-6	11'-1 1/2	25'-3	22'-3	12.5	47'-6	28.3	72'-9	44.0
21'-1	12'-9	6'-6	11'-3	25'-6	22'-6	12.5	48'-0	28.1	73'-6	43.8
21'-6	12'-11	6'-6	11'-5 1/2	25'-11	22'-11	13.0	48'-10	29.4	74'-9	45.9

**GENERAL NOTES**

1. Refer to Standard Drawing E 717-SPCA-01 for single pipe anchor details.
2. Refer to Standard Drawings E 717-MPCA-01 and E 717-MPCA-02 for multiple pipe anchor details.

INDIANA DEPARTMENT OF TRANSPORTATION	
<b>CONCRETE ANCHOR</b>	
<b>TABLES</b>	
JANUARY 1998	
<b>STANDARD DRAWING NO. E 717-ANCH-03</b>	
	DETAILS PLACED IN THIS FORMAT 11-15-99  /s/ Anthony L. Uremovich 11-15-99 DESIGN STANDARDS ENGINEER DATE
DESIGN STANDARDS ENGINEER	/s/ Firooz Zandi 11-15-99 CHIEF HIGHWAY ENGINEER DATE ORIGINALLY APPROVED 1-02-98