

EXPANSION BEARING GEOMETRY

BRIDGE NO.	SUB-STRUCTURE NO.	ASKEW ANGLE	DIRECTION OF SKEW	EXPANSION BEARING TYPE *	SOLE PLATE				STAINLESS STEEL		MASONRY PLATE					ANCHOR BOLT		BEVELED WASHER THICKNESS		"A" DISTANCE (UPSTATION SIDE OF BEARING)								
					LENGTH (SPL)	WIDTH (SPW)	THICKNESS		LENGTH (SSL)	WIDTH (SSW)	LENGTH			KEEPER PLATE WIDTH (KPW)	OFFSET (BO)	LENGTH (BL)	WTA (UPSTATION)	WTB (DOWNSTATION)	TEMPERATURE (F)									
							SPTA (UPSTATION)	SPTB (DOWNSTATION)			MPL1	MPL2	MPL						WIDTH (MPW)	THICKNESS (MPT)	0	15	30	45	60	75	90	
ABUTMENT BEARINGS																												
43N	ABUT. 2	45°07'37"	AHEAD RIGHT	A	13 1/2"	22"	3/4"	1 1/4"	13"	13"	5 3/4"	7 1/4"	13"	22"	3/4"	12"	8 1/2"	2-0"	11/16"	3/8"	1 5/8"	1 7/8"	2 1/16"	2 1/4"	2 7/16"	2 5/8"	2 7/8"	
43S	ABUT. 1	44°36'15"	AHEAD RIGHT	B	12"	26"	1"	1 3/16"	11 1/2"	17"	4 1/2"	6"	10 1/2"	26"	7/8"	16"	10 1/2"	2-1"	1/2"	3/8"	3 7/16"	3 3/16"	3"	2 3/4"	2 1/2"	2 5/16"	2 1/16"	
49N	ABUT. 2	62°40'28"	AHEAD LEFT	C	12 1/2"	27 1/2"	3/4"	3/4"	12"	18 1/2"	5"	6 1/2"	11 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	2-0"	3/8"	3/8"	1 7/16"	1 13/16"	2 1/8"	2 1/2"	2 7/8"	3 3/16"	3 9/16"	
48S	ABUT. 1	88°20'14"	AHEAD LEFT	C	13"	27 1/2"	7/8"	3/4"	12 1/2"	18 1/2"	5"	6 1/2"	11 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	2-0"	3/8"	3/8"	3 13/16"	3 7/16"	3 1/8"	2 3/4"	2 3/8"	2 1/16"	1 11/16"	
49N	ABUT. 2	80°00'00"	---	C	10 1/2"	27 1/2"	3/4"	3/4"	10"	18 1/2"	5"	6 1/2"	11 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	2-0"	3/8"	3/8"	1 3/16"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"	1 13/16"	
49S	ABUT. 2	80°00'00"	---	C	10 1/2"	27 1/2"	3/4"	3/4"	10"	18 1/2"	5"	6 1/2"	11 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	2-0"	3/8"	3/8"	1 3/16"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"	1 13/16"	
50N	ABUT. 2	46°29'48"	AHEAD RIGHT	B	13"	26"	1 1/4"	1"	12 1/2"	17"	4 1/2"	6"	10 1/2"	26"	7/8"	16"	10 1/2"	2-1"	3/8"	9/16"	2 7/16"	2 11/16"	3"	3 1/4"	3 1/2"	3 13/16"	4 1/16"	
50S	ABUT. 1	43°31'43"	AHEAD RIGHT	B	12 1/2"	26"	1 7/16"	1"	12"	17"	4 1/2"	6"	10 1/2"	26"	7/8"	16"	10 1/2"	2-1"	3/8"	11/16"	3 3/4"	3 1/2"	3 1/4"	3"	2 3/4"	2 1/2"	2 1/4"	
51N	ABUT. 2	43°40'33"	AHEAD LEFT	G	11"	26"	3/4"	3/4"	10 1/2"	16 1/2"	4 1/2"	6"	10 1/2"	26"	7/8"	15 1/2"	10 1/2"	1-11"	3/8"	3/8"	1 3/8"	1 11/16"	1 15/16"	2 1/4"	2 9/16"	2 13/16"	3 1/8"	
51S	ABUT. 2	43°08'46"	AHEAD LEFT	G	11"	26"	3/4"	3/4"	10 1/2"	16 1/2"	4 1/2"	6"	10 1/2"	26"	7/8"	15 1/2"	10 1/2"	1-11"	3/8"	3/8"	1 3/8"	1 11/16"	1 15/16"	2 1/4"	2 9/16"	2 13/16"	3 1/8"	
PIER BEARINGS																												
43N	PIER 1	44°50'07"	AHEAD RIGHT	D	12 1/2"	23"	3/4"	1 1/8"	12"	14"	6 1/4"	7 3/4"	14"	23"	1 1/8"	13"	9"	2-0"	5/8"	3/8"	1 1/16"	1 1/8"	1 3/16"	1 1/4"	1 5/16"	1 3/8"	1 7/16"	
43N	PIER 2	45°01'13"	AHEAD RIGHT	D	13"	23"	3/4"	1 1/8"	12 1/2"	14"	6 1/4"	7 3/4"	14"	23"	1 1/8"	13"	9"	2-0"	5/8"	3/8"	1 1/16"	1 3/16"	1 3/8"	1 1/2"	1 5/8"	1 13/16"	1 15/16"	
43S	PIER 1	44°46'15"	AHEAD RIGHT	E	13 1/2"	27 1/2"	3/4"	1 1/16"	13"	18 1/2"	5 3/4"	7 1/4"	13"	27 1/2"	1 1/4"	17 1/2"	11 1/4"	2-0"	9/16"	3/8"	2 11/16"	2 9/16"	2 3/8"	2 1/4"	2 1/8"	1 15/16"	1 13/16"	
43S	PIER 2	44°58'53"	AHEAD RIGHT	D	13 1/2"	23"	3/4"	1 1/8"	13"	14"	6 1/4"	7 3/4"	14"	23"	1 1/8"	13"	9"	2-0"	5/8"	3/8"	1 7/8"	1 7/8"	1 13/16"	1 3/4"	1 11/16"	1 5/8"	1 5/8"	
48N	PIER 1	85°16'48"	AHEAD LEFT	F	14 1/2"	27 1/2"	3/4"	3/4"	14"	18 1/2"	7"	8 1/2"	15 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	1-11"	3/8"	3/8"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"	1 7/8"	
48N	PIER 2	63°58'14"	AHEAD LEFT	F	15 1/2"	27 1/2"	3/4"	3/4"	15"	18 1/2"	7"	8 1/2"	15 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	1-11"	3/8"	3/8"	1 5/16"	1 9/16"	1 3/4"	2"	2 1/4"	2 7/16"	2 11/16"	
48S	PIER 1	85°00'45"	AHEAD LEFT	F	15 1/2"	27 1/2"	3/4"	3/4"	15"	18 1/2"	7"	8 1/2"	15 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	1-11"	3/8"	3/8"	2 11/16"	2 7/16"	2 1/4"	2"	1 3/4"	1 9/16"	1 5/16"	
48S	PIER 2	63°58'14"	AHEAD LEFT	F	14 1/2"	27 1/2"	3/4"	3/4"	14"	18 1/2"	7"	8 1/2"	15 1/2"	27 1/2"	1"	17 1/2"	11 1/4"	1-11"	3/8"	3/8"	1 7/8"	1 3/4"	1 5/8"	1 1/2"	1 3/8"	1 1/4"	1 1/8"	
50N	PIER 1	44°50'40"	AHEAD RIGHT	E	13"	27 1/2"	1 1/16"	3/4"	12 1/2"	18 1/2"	5 3/4"	7 1/4"	13"	27 1/2"	1 1/4"	17 1/2"	11 1/4"	2-0"	3/8"	9/16"	1 3/4"	1 7/8"	1 15/16"	2"	2 1/16"	2 1/8"	2 1/4"	
50N	PIER 2	45°48'12"	AHEAD RIGHT	E	13"	27 1/2"	1 1/16"	3/4"	12 1/2"	18 1/2"	5 3/4"	7 1/4"	13"	27 1/2"	1 1/4"	17 1/2"	11 1/4"	2-0"	3/8"	9/16"	1 7/16"	1 5/8"	1 13/16"	2"	2 3/16"	2 3/8"	2 9/16"	
50S	PIER 1	44°11'11"	AHEAD RIGHT	E	12 1/2"	27 1/2"	1 1/8"	3/4"	12"	18 1/2"	5 3/4"	7 1/4"	13"	27 1/2"	1 1/4"	17 1/2"	11 1/4"	2-0"	3/8"	5/8"	2 5/16"	2 1/8"	1 15/16"	1 3/4"	1 9/16"	1 3/8"	1 3/16"	
50S	PIER 2	45°05'50"	AHEAD RIGHT	E	12 1/2"	27 1/2"	1 1/8"	3/4"	12"	18 1/2"	5 3/4"	7 1/4"	13"	27 1/2"	1 1/4"	17 1/2"	11 1/4"	2-0"	3/8"	5/8"	2"	1 7/8"	1 13/16"	1 3/4"	1 11/16"	1 5/8"	1 1/2"	
51N	PIER 1(S1)	90°00'00"	---	H	9"	26"	3/4"	3/4"	8 1/2"	16"	4 1/2"	6"	10 1/2"	26"	7/8"	15"	10 1/2"	2-0"	3/8"	3/8"	1 1/8"	1 3/16"	1 3/16"	1 1/4"	1 5/16"	1 5/16"	1 3/8"	
51N	PIER 1(S2)	90°00'00"	---	J	9 1/2"	26"	15/16"	3/4"	9"	20"	4 3/4"	6 1/4"	11"	29"	7/8"	19"	12"	1-11"	3/8"	3/8"	1 9/16"	1 9/16"	1 7/16"	1 3/8"	1 1/4"	1 1/8"	1 1/16"	0 15/16"
51N	PIER 3	44°34'50"	AHEAD LEFT	K	13 1/2"	27 1/2"	7/8"	3/4"	13"	18 1/2"	6 3/4"	8 1/4"	15"	27 1/2"	1 1/8"	17 1/2"	11 1/4"	2-0"	3/8"	3/8"	0 7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	
51N	PIER 4	43°59'36"	AHEAD LEFT	L	14"	29 1/2"	7/8"	7/8"	13 1/2"	20 1/2"	6 1/4"	7 3/4"	14"	29 1/2"	1 1/8"	19 1/2"	12 1/4"	2-2"	3/8"	3/8"	1 5/16"	1 9/16"	1 3/4"	2"	2 1/4"	2 7/16"	2 11/16"	
51S	PIER 1(S1)	90°00'00"	---	H	9"	26"	3/4"	3/4"	8 1/2"	16"	4 1/2"	6"	10 1/2"	26"	7/8"	15"	10 1/2"	2-0"	3/8"	3/8"	1 1/8"	1 3/16"	1 3/16"	1 1/4"	1 5/16"	1 5/16"	1 3/8"	
51S	PIER 1(S2)	90°00'00"	---	J	10 1/2"	26"	15/16"	3/4"	10"	20"	4 3/4"	6 1/4"	11"	29"	7/8"	19"	12"	1-11"	3/8"	3/8"	2 3/8"	2 3/16"	1 15/16"	1 3/4"	1 9/16"	1 5/16"	1 1/8"	
51S	PIER 2	90°00'00"	---	K	14 1/2"	27 1/2"	15/16"	3/4"	14"	18 1/2"	6 3/4"	8 1/4"	15"	27 1/2"	1 1/8"	17 1/2"	11 1/4"	2-0"	3/8"	1/2"	2 1/16"	1 15/16"	1 7/8"	1 3/4"	1 5/8"	1 9/16"	1 7/16"	
51S	PIER 4	44°03'21"	AHEAD LEFT	L	13"	29 1/2"	7/8"	7/8"	12 1/2"	20 1/2"	6 1/4"	7 3/4"	14"	29 1/2"	1 1/8"	19 1/2"	12 1/4"	2-2"	3/8"	3/8"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"	1 7/8"	
51S	PIER 5	48°27'53"	AHEAD LEFT	L	14"	29 1/2"	7/8"	7/8"	13 1/2"	20 1/2"	6 1/4"	7 3/4"	14"	29 1/2"	1 1/8"	19 1/2"	12 1/4"	2-2"	3/8"	3/8"	1 5/16"	1 9/16"	1 3/4"	2"	2 1/4"	2 7/16"	2 11/16"	

* SEE TABLE OF "EXPANSION BEARING TYPE DETAILS" BELOW
 ** THE "A" DISTANCES FOR THESE BEARINGS ARE FOR STRINGER 1 ONLY. SEE "BR 51 SUPPLEMENTARY "A" DISTANCE TABLE" FOR OTHER STRINGERS.

(S1) - SPAN 1
 (S2) - SPAN 2

BRIDGE 51N AND 51S ARE NOT PART OF THIS PROJECT

- NOTES:**
- SEE EXPANSION BEARING DETAILS ON BRIDGE SHEET C-23.
 - SEE SOLE & MASONRY PLATE DETAILS ON BRIDGE SHEET C-25.
 - SEE BEARING NOTES ON BRIDGE SHEET C-22.

EXPANSION BEARING TYPE DETAILS							
EXPANSION BEARING TYPE	STEEL REINFORCED ELASTOMERIC PAD WITH PTFE SURFACE						
	LENGTH (EPL)	WIDTH (EPW)	THICKNESS (EPT)	COVER LAYER THICKNESS (CLT)	INTERNAL LAYER THICKNESS (ILT)	NUMBER OF INTERNAL ELASTOMER LAYERS	NUMBER OF INTERNAL STEEL PLATES
A	9"	13"	2 3/4"	1/4"	1/2"	4	4
B	6 1/2"	17"	3 3/4"	1/4"	3/8"	7	7
C	7 1/2"	18 1/2"	2 3/4"	1/4"	1/2"	4	4
D	10"	14"	2 3/4"	1/4"	1/2"	4	4
E	9"	18 1/2"	2 3/4"	1/4"	1/2"	4	4
F	11 1/2"	18 1/2"	2 1/2"	1/4"	5/8"	3	3
G	8 1/2"	16 1/2"	2 1/4"	1/4"	3/8"	4	4
H	8 1/2"	16"	3 1/4"	1/4"	3/8"	6	6
J	7"	20"	2 1/8"	1/4"	1/2"	3	3
K	11"	18 1/2"	2 1/2"	1/4"	5/8"	3	3
L	10"	20 1/2"	4 3/4"	1/4"	5/8"	6	6

BR 51 SUPPLEMENTARY "A" DISTANCE TABLE									
BRIDGE NO.	SUB-STRUCTURE NO.	STRINGER NO.	"A" DISTANCE (UPSTATION SIDE OF BEARING)						
			TEMPERATURE (F)						
			0	15	30	45	60	75	90
51N	ABUT. 2	2	1 3/8"	1 11/16"	1 15/16"	2 1/4"	2 9/16"	2 13/16"	3 1/8"
		3 & 4	1 7/16"	1 11/16"	2"	2 1/4"	2 1/2"	2 13/16"	3 1/16"
		5	1 1/2"	1 3/4"	2"	2 1/4"	2 1/2"	2 3/4"	3"
51S	ABUT. 2	2	1 3/8"	1 11/16"	1 15/16"	2 1/4"	2 9/16"	2 13/16"	3 1/8"
		3 & 4	1 7/16"	1 11/16"	2"	2 1/4"	2 1/2"	2 13/16"	3 1/16"
		5	1 1/2"	1 3/4"	2"	2 1/4"	2 1/2"	2 3/4"	3"
51N	PIER 3	2 & 3	0 15/16"	1 1/16"	1 1/8"	1 1/4			