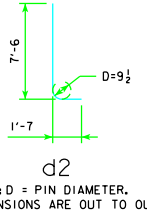
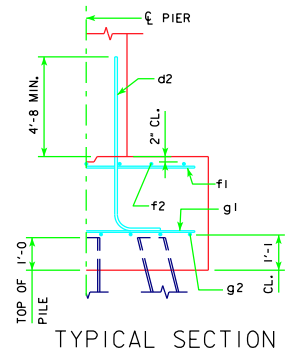
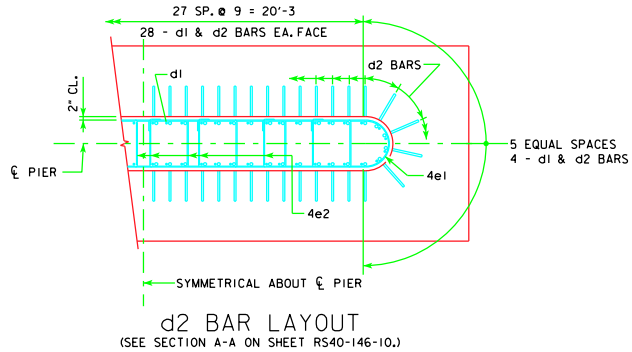


H IN FT.	℄ - ℄ ABUT. BRG.	PILING (HP10x57)		FOOTING SIZE
		① DES. BRG. (TONS)	② LRFD DES. BRG. (KIPS)	
16 TO 18	160'-0"	17A	47	136
	180'-0"	17A	50	145
	200'-0"	18A	50	144
	220'-0"	20A	50	146
	240'-0"	20D	49	142
	260'-0"	21A	50	147
	280'-0"	23B	50	144
	300'-0"	25A	50	143
	320'-0"	26A	50	146
	340'-0"	26B	50	147
19 TO 21	160'-0"	17A	49	140
	180'-0"	18A	49	140
	200'-0"	19A	50	144
	220'-0"	20C	50	146
	240'-0"	20D	50	146
	260'-0"	22A	50	145
	280'-0"	24A	49	142
	300'-0"	25A	50	147
	320'-0"	27A	50	146
	340'-0"	27B	50	146
22 TO 24	160'-0"	17A	50	145
	180'-0"	18A	50	145
	200'-0"	20A	50	144
	220'-0"	20D	48	139
	240'-0"	21A	50	145
	260'-0"	23A	50	145
	280'-0"	24A	50	145
	300'-0"	26A	50	145
	320'-0"	27B	49	143
	340'-0"	28A	50	145
25 TO 27	160'-0"	18A	49	140
	180'-0"	19A	50	144
	200'-0"	20B	50	145
	220'-0"	20D	49	142
	240'-0"	22A	50	143
	260'-0"	23B	50	143
	280'-0"	25A	50	144
	300'-0"	27A	50	144
	320'-0"	27B	50	145
	340'-0"	28B	50	144
28 TO 30	160'-0"	18B	49	141
	180'-0"	19B	50	145
	200'-0"	20C	50	145
	220'-0"	20D	50	145
	240'-0"	22A	50	146
	260'-0"	23B	50	146
	280'-0"	25A	50	146
	300'-0"	27A	50	146
	320'-0"	28A	50	144
	340'-0"	28B	50	146
31 TO 33	160'-0"	18B	50	145
	180'-0"	19C	50	146
	200'-0"	20D	48	139
	220'-0"	21A	50	144
	240'-0"	22B	50	144
	260'-0"	24A	50	143
	280'-0"	26A	50	144
	300'-0"	27B	49	142
	320'-0"	28A	50	145
	340'-0"	29A	50	145
34 TO 36	160'-0"	18C	50	145
	180'-0"	19D	49	141
	200'-0"	20D	49	141
	220'-0"	21A	50	146
	240'-0"	22B	50	146
	260'-0"	24A	50	146
	280'-0"	26A	50	146
	300'-0"	27B	50	144
	320'-0"	28B	50	144
	340'-0"	30A	50	143

H IN FT.	℄ - ℄ ABUT. BRG.	PILING (HP10x57)		FOOTING SIZE
		① DES. BRG. (TONS)	② LRFD DES. BRG. (KIPS)	
37 TO 40	160'-0"	19C	50	144
	180'-0"	19D	50	145
	200'-0"	20D	50	145
	220'-0"	22A	50	145
	240'-0"	23B	50	145
	260'-0"	25A	50	145
	280'-0"	26B	49	143
	300'-0"	27B	50	146
	320'-0"	28B	50	147
	340'-0"	30A	50	146

FOOTING SIZE	REINFORCING STEEL (ONE FOOTING)				TOTAL WEIGHT (LB.)	STRUCTURAL CONCRETE (CY)
	BAR	NO., SIZE & SPACING	LENGTH	WEIGHT (LB.)		
4' x 8' x 28'	d2	64 - #9 AS SHOWN	9'-1	1977	3294	33.2
	f1	28 - #5 @ 1'-0"	7'-8	224		
	f2	8 - #5 @ 1'-0"	27'-8	231		
	g1	28 - #6 @ 1'-0"	7'-8	322		
	g2	13 - #6 @ 0'-7½"	27'-8	540		
	d2	64 - #9 AS SHOWN	9'-1	1977		
	f1	28 - #5 @ 1'-0"	8'-8	253		
	f2	9 - #5 @ 1'-0"	27'-8	260		
4' x 9' x 28'	g1	35 - #6 @ 0'-9½"	8'-8	456	3486	37.3
	g2	13 - #6 @ 0'-8½"	27'-8	540		
	d2	64 - #9 AS SHOWN	9'-1	1977		
	f1	28 - #5 @ 1'-0"	10'-8	312		
	f2	11 - #5 @ 1'-0"	27'-8	317		
	g1	31 - #8 @ 0'-11"	10'-8	883		
	g2	13 - #6 @ 0'-10½"	27'-8	540		
	d2	64 - #9 AS SHOWN	9'-1	1977		
4' x 11' x 28'	f1	30 - #5 @ 1'-0"	10'-8	334	4029	45.6
	f2	11 - #5 @ 1'-0"	29'-8	340		
	g1	32 - #8 @ 0'-11"	10'-8	911		
	g2	16 - #8 @ 0'-8"	29'-8	1267		
	d2	64 - #9 AS SHOWN	9'-1	1977		
	f1	30 - #5 @ 1'-0"	13'-8	428		
	f2	14 - #5 @ 1'-0"	29'-8	433		
	g1	36 - #9 @ 0'-10"	13'-8	1673		
4' x 14' x 30'	g2	16 - #8 @ 0'-10½"	29'-8	1267	5778	62.2
	d2	64 - #9 AS SHOWN	9'-1	1977		
	f1	32 - #5 @ 1'-0"	13'-8	456		
	f2	14 - #5 @ 1'-0"	31'-8	462		
	g1	39 - #9 @ 0'-9½"	13'-8	1812		
	g2	22 - #8 @ 0'-7½"	31'-8	1860		
	d2	64 - #9 AS SHOWN	9'-1	1977		
	f1	34 - #5 @ 1'-0"	13'-8	485		
4' x 14' x 32'	f2	14 - #5 @ 1'-0"	33'-8	492	6567	66.4
	g1	41 - #9 @ 0'-10"	13'-8	1905		
	g2	22 - #8 @ 0'-7½"	33'-8	1978		
4' x 14' x 34'	d2	64 - #9 AS SHOWN	9'-1	1977	6837	70.5
	f1	34 - #5 @ 1'-0"	13'-8	485		
	f2	14 - #5 @ 1'-0"	33'-8	492		
	g1	41 - #9 @ 0'-10"	13'-8	1905		
	g2	22 - #8 @ 0'-7½"	33'-8	1978		
	d2	64 - #9 AS SHOWN	9'-1	1977		
	f1	34 - #5 @ 1'-0"	13'-8	485		
	f2	14 - #5 @ 1'-0"	33'-8	492		

- ① FOR DETERMINING ACTUAL PILE LENGTHS IN FIELD.
② FOR ESTIMATING PILE LENGTHS USING AASHTO LRFD SPECIFICATIONS.



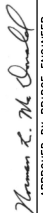
NOTE: D = PIN DIAMETER.
DIMENSIONS ARE OUT TO OUT.

FOOTING NOTES:

THESE FOOTINGS ARE DESIGNED AND DETAILED TO BE USED WITH THE CAP AND COLUMN DETAILS OF THE TEE PIERS AS SHOWN ON SHEET RS40-146-10.

BATTER PILES IN EXTERIOR ROWS 1:4 IN THE DIRECTION SHOWN.

STEEL PILING USED AS POINT BEARING SHALL HAVE A MINIMUM DISTANCE OF APPROXIMATELY 10 FEET FROM BOTTOM OF FOOTING TO TOP OF BEARING ROCK. THE PILE LAYOUTS ARE SUCH THAT THE DISTANCE CENTER TO CENTER OF ADJACENT PILING SHALL NOT EXCEED 8'-0".

LATEST REVISION DATE	 APPROVED BY BRIDGE ENGINEER	 Iowa Department of Transportation Highway Division	
		STANDARD DESIGN - 40' ROADWAY, 3 SPAN BRIDGES ROLLED STEEL BEAM BRIDGES JUNE, 2010	
		TEE PIER - 50 TON STEEL PILE FOOTINGS 30° SKEW - SHEET 1	RS40-148-10