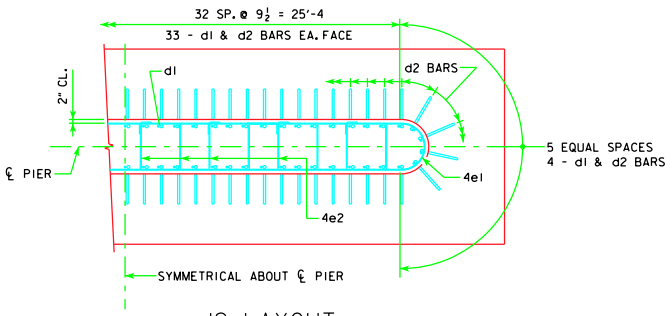
H IN FT.	℄ - ℄ ABUT. BRG.	PILING (HP10x57) NO. & LAYOUT	① DES. BRG. (TONS)	② LRFD DES. BRG. (KIPS)	FOOTING SIZE
16 TO 18	160'-0	17A	49	140	4' x 8' x 32'
	180'-0	18A	49	140	
	200'-0	19A	50	143	
	220'-0	20A	50	145	
	240'-0	21B	50	144	4' x 11' x 32'
	260'-0	22B	50	145	
	280'-0	24A	50	145	
	300'-0	26A	50	146	
	320'-0	27A	50	144	4' x 14' x 32'
	340'-0	28A	50	145	
19 TO 21	160'-0	17A	50	145	4' x 8' x 32'
	180'-0	18A	50	145	
	200'-0	20A	48	138	
	220'-0	21A	50	144	4' x 9' x 32'
	240'-0	22B	49	140	4' x 11' x 32'
	260'-0	23A	50	145	
	280'-0	25A	50	145	
	300'-0	26B	50	143	4' x 14' x 32'
	320'-0	28A	49	142	
	340'-0	29A	50	145	
22 TO 24	160'-0	18A	49	140	4' x 8' x 32'
	180'-0	19A	50	144	
	200'-0	20B	49	141	4' x 9' x 32'
	220'-0	22A	49	142	
	240'-0	22B	50	143	4' x 11' x 32'
	260'-0	24A	50	143	
	280'-0	26A	50	145	
	300'-0	26B	50	146	4' x 14' x 32'
	320'-0	28A	50	145	
	340'-0	30A	50	144	
25 TO 27	160'-0	18A	50	145	4' x 8' x 32'
	180'-0	20A	48	139	
	200'-0	21A	49	141	4' x 9' x 32'
	220'-0	22B	48	137	4' x 11' x 32'
	240'-0	22B	50	147	
	260'-0	24A	50	146	
	280'-0	26B	49	141	4' x 14' x 32'
	300'-0	27A	50	145	
	320'-0	29A	50	144	
	340'-0	30A	50	147	
28 TO 30	160'-0	19A	50	143	4' x 8' x 32'
	180'-0	20A	49	143	
	200'-0	21A	50	144	4' x 9' x 32'
	220'-0	22B	49	140	4' x 11' x 32'
	240'-0	23A	50	146	
	260'-0	25A	50	145	
	280'-0	26B	50	144	4' x 14' x 32'
	300'-0	28A	50	143	
	320'-0	30A	50	143	
	340'-0	31A	50	146	
31 TO 33	160'-0	20A	48	138	4' x 8' x 32'
	180'-0	20B	50	144	4' x 9' x 32'
	200'-0	22A	49	142	
	220'-0	22B	50	143	4' x 11' x 32'
	240'-0	24A	50	143	
	260'-0	26A	50	145	
	280'-0	26B	50	146	4' x 14' x 32'
	300'-0	28A	50	145	
	320'-0	30A	50	145	
	340'-0	32B	50	143	4' x 14' x 36'
34 TO 36	160'-0	20A	50	143	4' x 8' x 32'
	180'-0	21A	50	144	4' x 9' x 32'
	200'-0	22B	48	137	4' x 11' x 32'
	220'-0	22B	50	146	
	240'-0	24A	50	146	
	260'-0	26B	49	140	4' x 14' x 32'
	280'-0	27A	50	145	
	300'-0	29A	50	144	
	320'-0	31A	50	145	
	340'-0	32B	50	145	4' x 14' x 36'

H IN FT.	℄ - ℄ ABUT. BRG.	PILING (HP10x57) NO. & LAYOUT	① DES. BRG. (TONS)	② LRFD DES. BRG. (KIPS)	FOOTING SIZE
37 TO 40	160'-0	20B	50	145	4' x 9' x 32'
	180'-0	22A	50	144	
	200'-0	22B	49	141	4' x 11' x 32'
	220'-0	23A	50	146	
	240'-0	25A	50	146	
	260'-0	26B	50	143	4' x 14' x 32'
	280'-0	28A	50	143	
	300'-0	30A	50	144	
	320'-0	32A	50	145	4' x 14' x 34'
	340'-0	32C	50	146	4' x 15' x 38'

FOOTING SIZE	REINFORCING STEEL (ONE FOOTING) BAR	NO., SIZE & SPACING	LENGTH	WEIGHT (LB.)	TOTAL WEIGHT (LB.)	STRUCTURAL CONCRETE (CY)
4' x 8' x 32'	d2	74 - #9 AS SHOWN	9'-1	2285	3601	37.9
	f1	32 - #5 @ 1'-0	7'-8	256		
	f2	8 - #5 @ 1'-0	31'-8	264		
	g1	32 - #6 @ 1'-0	7'-8	368		
	g2	9 - #6 @ 0'-11	31'-8	428		
4' x 9' x 32'	d2	74 - #9 AS SHOWN	9'-1	2285	3820	42.7
	f1	32 - #5 @ 1'-0	8'-8	289		
	f2	9 - #5 @ 1'-0	31'-8	297		
	g1	40 - #6 @ 0'-9½	8'-8	521		
	g2	9 - #6 @ 1'-0	31'-8	428		
4' x 11' x 32'	d2	74 - #9 AS SHOWN	9'-1	2285	4600	52.1
	f1	32 - #5 @ 1'-0	10'-8	356		
	f2	11 - #5 @ 1'-0	31'-8	363		
	g1	36 - #8 @ 0'-10½	10'-8	1025		
	g2	12 - #6 @ 0'-11	31'-8	571		
4' x 14' x 32'	d2	74 - #9 AS SHOWN	9'-1	2285	5681	66.4
	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	14 - #6 @ 1'-0	31'-8	666		
4' x 14' x 34'	d2	74 - #9 AS SHOWN	9'-1	2285	6337	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	17 - #7 @ 0'-10	33'-8	1170		
4' x 14' x 36'	d2	74 - #9 AS SHOWN	9'-1	2285	7136	74.7
	f1	36 - #5 @ 1'-0	13'-8	513		
	f2	14 - #5 @ 1'-0	35'-8	521		
	g1	43 - #9 @ 0'-10	13'-8	1998		
	g2	15 - #9 @ 0'-11½	35'-8	1819		
4' x 15' x 38'	d2	74 - #9 AS SHOWN	9'-1	2285	8182	84.4
	f1	38 - #5 @ 1'-0	14'-8	581		
	f2	15 - #5 @ 1'-0	37'-8	589		
	g1	46 - #9 @ 0'-10	14'-8	2294		
	g2	19 - #9 @ 0'-9½	37'-8	2433		

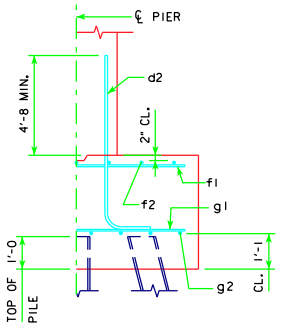
① FOR DETERMINING ACTUAL PILE LENGTHS IN FIELD.

② FOR ESTIMATING PILE LENGTHS USING AASHTO LRFD SPECIFICATIONS.

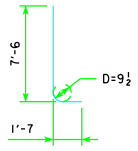


d2 LAYOUT

(SEE SECTION A-A ON SHEET RS40-156-10.)



TYPICAL SECTION



d2

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 RS40-156-10.

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
45° SKEW - SHEET 1

RS40-158-10