

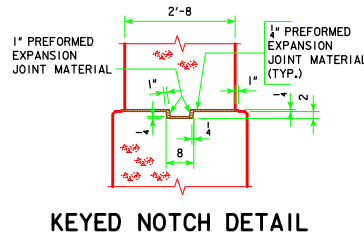
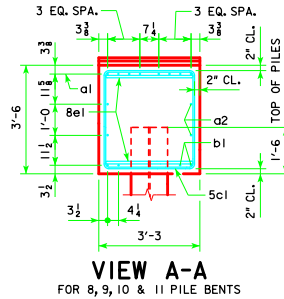
**PILE BENT NOTES:**

THESE PIER BENTS ARE DESIGNED FOR USE IN LOCATIONS WHERE ICE AND DRIFT CONDITIONS ARE NOT SEVERE.

FOR DETAILS OF TRESTLE PILES, SEE STANDARD PIOL.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

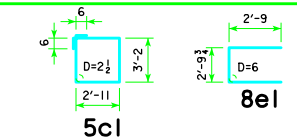
PIER PILES SHALL BE DRIVEN TO VALUES SHOWN IN DESIGN PLANS.



**REINFORCING BAR LIST AND ESTIMATED QUANTITIES - PER PILE BENT**

BAR	LENGTH	SHAPE	8 PILE BENT			9 PILE BENT			10 PILE BENT			11 PILE BENT		
			NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT
a1	57'-8"		8	9	1569	8	9	1569	8	9	1569	8	9	1569
a2	57'-8"		4	8	616	4	8	616	4	8	616	4	8	616
b1	57'-8"		4	10	993	4	10	993	4	10	993	4	10	993
5c1	13'-2"		54	5	742	62	5	851	56	5	769	62	5	851
8e1	8'-4"		4	8	89	4	8	89	4	8	89	4	8	89
① REINFORCING STEEL (LB.)			4009			4118			4036			4118		
STRUCTURAL CONCRETE (CY)			26.2			26.2			26.2			26.2		

**BENT BAR DETAILS**



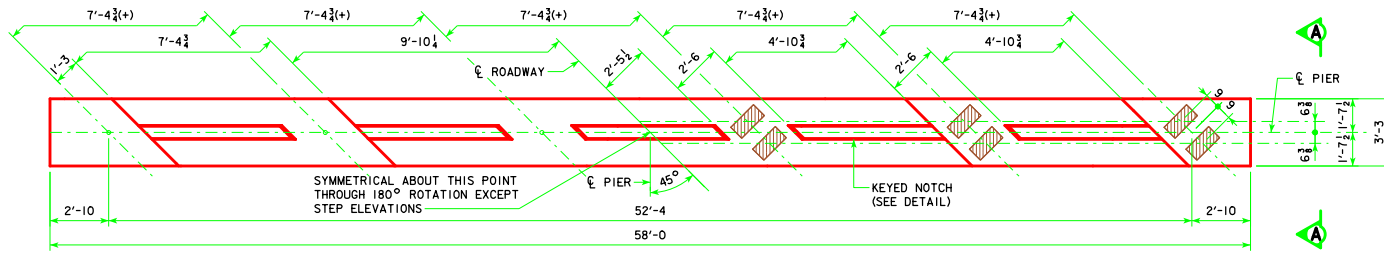
NOTE: ALL DIMENSIONS ARE OUT TO OUT, D=PIN DIAMETER.

**FRICTION OR POINT BEARING PILING**

ABUTMENT BEARING	PIOL TYPE 3		
	NUMBER OF TRESTLE PILES	PILE SIZE	② LRFD PU, STRENGTH I DES. LOAD (KIPS)
138'-10"	8	HPI4x73	159
	8	HPI4x89	159
151'-4"	8	HPI4x73	167
	8	HPI4x89	167
163'-10"	8	HPI4x73	180
	8	HPI4x89	180
176'-4"	9	HPI4x73	167
	8	HPI4x89	188
188'-10"	9	HPI4x73	174
	8	HPI4x89	196
201'-4"	10	HPI4x73	174
	8	HPI4x89	217
213'-10"	10	HPI4x73	182
	9	HPI4x89	202
226'-4"	11	HPI4x73	174
	9	HPI4x89	213
243'-0"	11	HPI4x73	183
	9	HPI4x89	223

- ① SEE SHEET H40-31-06 FOR STEP REINFORCING STEEL QUANTITIES AND DETAILS.
- ② NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.

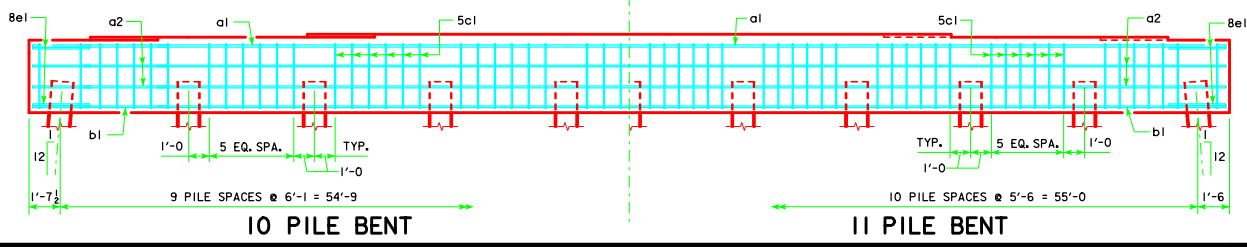
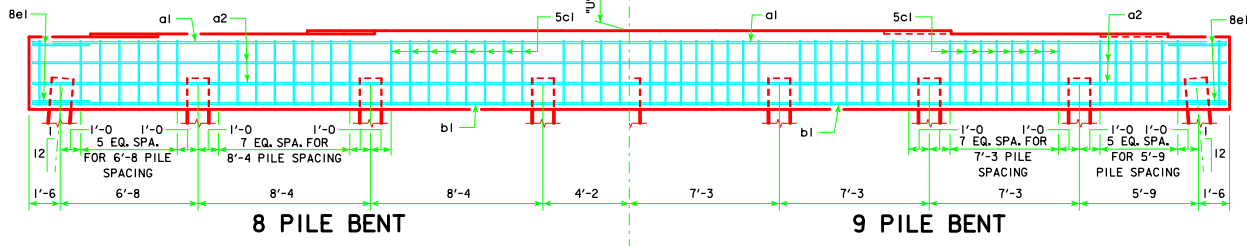
NOTE: FRICTION BEARING INCLUDES SIDE FRICTION AND END BEARING IN SOIL. POINT BEARING INCLUDES SIDE FRICTION AND POINT BEARING IN ROCK.



**TYPICAL PLAN**

NOTE: THE HEIGHT OF THE STEPS ON THE BRIDGE SEAT IS EQUAL TO THE DIFFERENCE IN ELEVATIONS OF THE TOP OF SLAB AT ADJACENT BEAMS ALONG  $\epsilon$  PIER. SEE SHEET H40-29-06 FOR "U" DIMENSION.

SYMMETRICAL ABOUT  $\epsilon$  PIER EXCEPT STEPS GRADE ELEV. @  $\epsilon$  PIER



REVISED 05-13 - REVISION FOR LRFD PILE DESIGN.

LATEST REVISION DATE  
05-13  
APPROVED BY BRIDGE ENGINEER  
*Thomas E. Mc Donnell*

**Iowa Department of Transportation Highway Division**  
STANDARD DESIGN - 40' ROADWAY, THREE SPAN BRIDGE  
**PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES**  
AUGUST, 2009

**PILE BENT PIERS  
HPI4 PILES  
45° SKEW**

**H40-56-06**