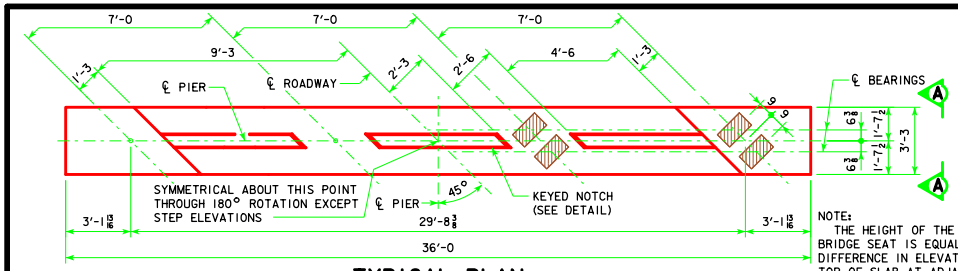
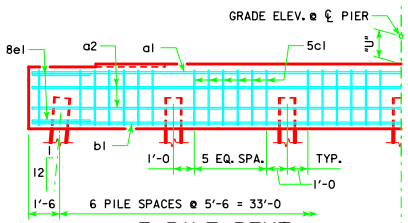
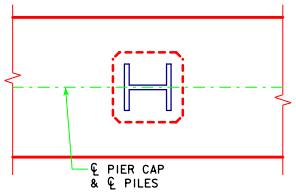


TYPICAL PLAN

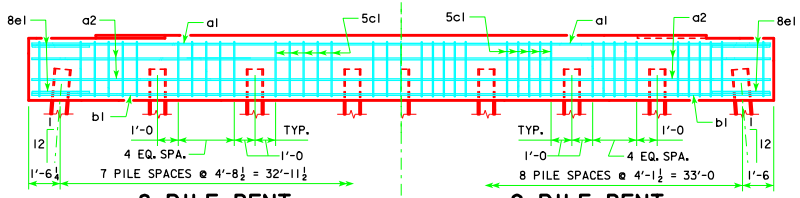
NOTE:
THE HEIGHT OF THE STEPS ON THE BRIDGE SEAT IS EQUAL TO THE DIFFERENCE IN ELEVATIONS OF THE TOP OF SLAB AT ADJACENT BEAMS ALONG ℄ PIER.
SEE SHEET H24-29-06 FOR "U" DIMENSION.



7 PILE BENT



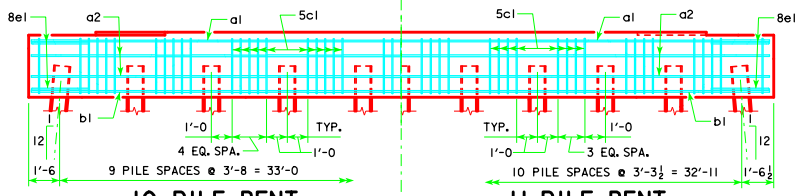
PILE ORIENTATION DETAIL FOR TYPE 3 TRESTLE BENT PILES



8 PILE BENT

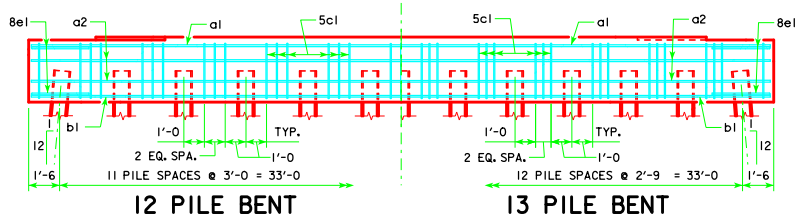
9 PILE BENT

SYMMETRICAL ABOUT ℄ PIER EXCEPT STEPS



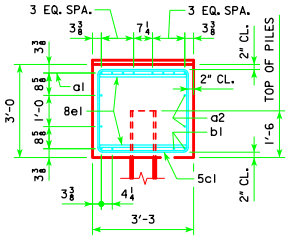
10 PILE BENT

11 PILE BENT



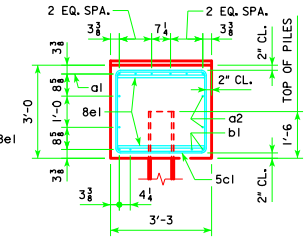
12 PILE BENT

13 PILE BENT



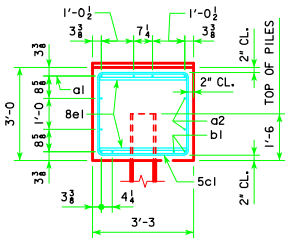
VIEW A-A

FOR 7 PILE BENT



VIEW A-A

FOR 8, 9, 10 & 11 PILE BENTS



VIEW A-A

FOR 12 & 13 PILE BENTS

REINFORCING BAR LIST AND ESTIMATED QUANTITIES - PER PILE BENT

			7 PILE BENT			8 PILE BENT			9 PILE BENT			10 PILE BENT			11 PILE BENT			12 PILE BENT			13 PILE BENT		
BAR	LENGTH	SHAPE	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT	NO.	SIZE	WEIGHT
a1	35'-8		8	9	970	6	9	728	6	9	728	6	9	728	6	9	728	4	9	485	4	9	485
a2	35'-8		4	8	381	4	8	381	4	8	381	4	8	381	4	8	381	4	8	381	4	8	381
b1	35'-8		4	9	485	4	9	485	4	9	485	4	9	485	4	9	485	4	8	381	4	8	381
5c1	12'-2		38	5	482	37	5	470	42	5	533	47	5	596	42	5	533	35	5	444	38	5	482
8e1	8'-4		4	8	89	4	8	89	4	8	89	4	8	89	4	8	89	4	8	89	4	8	89
(1) REINFORCING STEEL (LB.)			2407			2153			2216			2279			2216			1780			1818		
STRUCTURAL CONCRETE (CY)	(2) PILE TYPE																						
	1, 2		-----			-----			13.2			13.1			13.1			13.1			13.0		
	3		13.6			13.6			13.6			13.6			13.6			-----			-----		

PILE BENT NOTES:

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

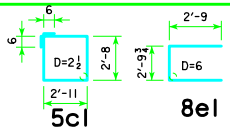
FOR DETAILS OF TRESTLE PILES, TYPES 1, 2 AND 3, SEE STANDARD P1OL.

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.

BENT BAR DETAILS

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



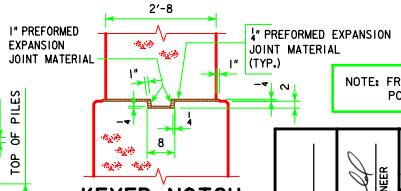
℄-℄ ABUTMENT BEARING	FRICTION BEARING PILING			FRICTION OR POINT BEARING PILING		
	P1OL TYPE 1 OR 2			P1OL TYPE 3		
	NUMBER OF TRESTLE PILES	(3) "K" (INCHES)	(4) LRFD Pu, STRENGTH I, DES. LOAD (KIPS)	NUMBER OF TRESTLE PILES	PILE SIZE	(4) LRFD Pu, STRENGTH I, DES. LOAD (KIPS)
138'-10	10	14	89	7	HP10x57	127
	9	16	99	7	HP12x53	127
151'-4	10	14	93	7	HP10x57	133
	9	16	104	7	HP12x53	133
163'-10	11	14	91	7	HP10x57	144
	10	16	101	8	HP12x53	126
176'-4	12	14	87	8	HP10x57	131
	10	16	105	8	HP12x53	131
188'-10	12	14	91	8	HP10x57	137
	10	16	109	9	HP12x53	121
201'-4	-----	--	-----	9	HP10x57	134
	-----	--	-----	9	HP12x53	134
213'-10	-----	--	-----	9	HP10x57	141
				10	HP12x53	127
226'-4	-----	--	-----	10	HP10x57	133
				10	HP12x53	133
243'-0	-----	--	-----	10	HP10x57	140
				11	HP12x53	127

(1) SEE SHEET H24-31-06 FOR STEP REINFORCING STEEL QUANTITIES AND DETAILS.

(2) CONCRETE QUANTITIES SHOWN HAVE HAD THE VOLUME OF EMBEDDED PILES DEDUCTED FOR TYPES 1 AND 2 BASED ON 0.8 FT^3 PER FOOT OF EMBEDMENT. THE CONCRETE QUANTITIES FOR TYPE 3 PILES DO NOT REQUIRE REDUCTION FOR PILE EMBEDMENT.

(3) SEE STANDARD P1OL FOR "K" DIMENSION.

(4) NOTE: PU, STRENGTH I DESIGN LOAD (KIPS) IS NOT THE VALUE USED IN THE FIELD FOR DRIVING PILES.



KEYED NOTCH DETAIL

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

05-13
LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 24' ROADWAY, THREE SPAN BRIDGE

PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGES

DECEMBER, 2006

PILE BENT PIERS

45° SKEW

H24-48-06

REVISED 05-13 - REVISION FOR LRFD PILE DESIGN.