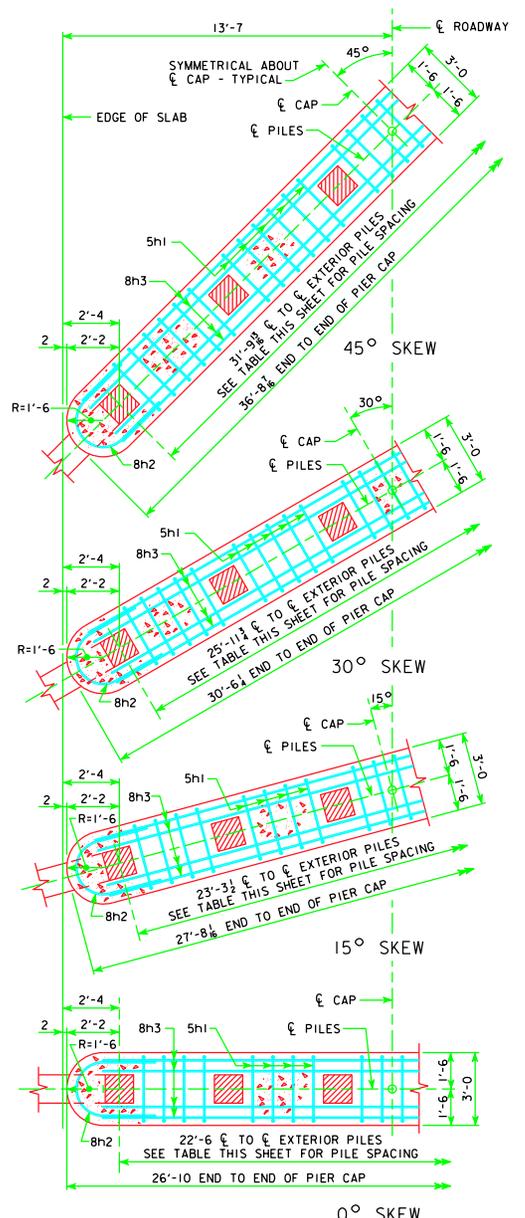


REVISED 03-09 - CHANGED PILE STANDARD FROM P10A TO P10L IN NOTE 4.



**0° SKEW  
HALF SECTION BELOW SLAB**

NOTE: NUMBER OF PILES AND STIRRUPS SHOWN ARE FOR A 70' BRIDGE. CAP DIMENSIONS ARE TYPICAL FOR ALL SPANS.

**REACTION, PILE SPACING, NUMBER AND BEARING**

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
0° SKEW	5 SPA. @ 4'-6	5 SPA. @ 4'-6	6 SPA. @ 3'-9	7 SPA. @ ABOUT 3'-3	8 SPA. @ ABOUT 2'-10	8 SPA. @ ABOUT 2'-10	9 SPA. @ 2'-6	9 SPA. @ 2'-6	9 SPA. @ 2'-6
15° SKEW	5 SPA. @ ABOUT 4'-8	5 SPA. @ ABOUT 4'-8	6 SPA. @ ABOUT 3'-11	7 SPA. @ ABOUT 3'-4	8 SPA. @ ABOUT 2'-11	8 SPA. @ ABOUT 2'-11	9 SPA. @ ABOUT 2'-7	9 SPA. @ ABOUT 2'-7	9 SPA. @ ABOUT 2'-7
30° SKEW	5 SPA. @ ABOUT 5'-2	5 SPA. @ ABOUT 5'-2	6 SPA. @ ABOUT 4'-4	7 SPA. @ ABOUT 3'-9	8 SPA. @ ABOUT 3'-3	8 SPA. @ 3'-3	9 SPA. @ ABOUT 2'-11	9 SPA. @ ABOUT 2'-11	9 SPA. @ ABOUT 2'-11
45° SKEW	5 SPA. @ ABOUT 6'-4	5 SPA. @ ABOUT 6'-4	6 SPA. @ ABOUT 5'-4	7 SPA. @ ABOUT 4'-7	8 SPA. @ ABOUT 4'-0	8 SPA. @ ABOUT 4'-0	9 SPA. @ ABOUT 3'-6	9 SPA. @ ABOUT 3'-6	9 SPA. @ ABOUT 3'-6
① REACTION	382 KIPS	424 KIPS	473 KIPS	526 KIPS	578 KIPS	640 KIPS	701 KIPS	765 KIPS	837 KIPS
② STRENGTH I REACTION	510 KIPS	566 KIPS	631 KIPS	701 KIPS	769 KIPS	850 KIPS	929 KIPS	1013 KIPS	1106 KIPS
① BEARING-TONS	32	36	34	33	33	36	36	39	42
②③ BEARING-TONS	29	32	31	31	30	34	33	36	40
④ PILING (NO.)	6	6	7	8	9	9	10	10	10

- ① VALUE INCLUDES DEAD LOAD (PIER CAP WEIGHT IS BASED ON 45° SKEW), LIVE LOAD AND LIVE LOAD IMPACT.
- ② VALUE INCLUDES DEAD LOAD (PIER CAP WEIGHT IS BASED ON 45° SKEW), AND LIVE LOAD, WITHOUT IMPACT.
- ③ FOR ESTIMATING PILE LENGTHS AND FOR DETERMINING ACTUAL PILE LENGTHS IN FIELD.
- ④ USE PILES AS SHOWN ON P10L STANDARD PILE DRAWING. TYPE, SIZE, AND LENGTH OF PILES SHALL BE SPECIFIED ON THE PLAN. THE LARGER PILE SIZE SHOWN ON P10L STANDARD PILE DRAWING SHALL BE USED IF EITHER THE ACTUAL "H" DIMENSION OR THE REQUIRED BEARING EXCEEDS THE MAXIMUM "H" OR MAXIMUM BEARING CAPACITY SHOWN FOR THE PILE.

**PIER NOTES:**

ALL MONOLITHIC PIER CAP REINFORCING AND CONCRETE IS INCLUDED IN SUPERSTRUCTURE ESTIMATE OF QUANTITIES.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

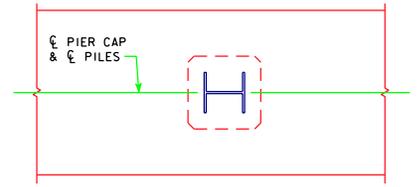
THE PIER PILES ARE TO BE DRIVEN TO FULL PENETRATION, IF PRACTICABLE, BUT IN NO CASE TO A BEARING VALUE LESS THAN THE PILE BEARING REQUIRED FOR EACH BRIDGE LENGTH AS SHOWN ON THIS SHEET. ADDITIONAL DRIVING CAPACITY MAY BE REQUIRED THROUGH SCOURABLE LAYERS. REFER TO GENERAL PLAN NOTES FOR ADDITIONAL INFORMATION.

CAP STEEL AS DETAILED ON P10L STANDARD PILE DRAWING IS REQUIRED FOR MONOLITHIC PIER CAPS.

THE CONCRETE QUANTITIES ARE BASED ON THE USE OF TYPE 3 PILING. IF TYPE 1 OR TYPE 2 IS USED, THE CONCRETE QUANTITIES MAY BE ADJUSTED TO ACCOUNT FOR THE CONCRETE DISPLACED BY THE PILING.

ALL REINFORCING STEEL IS TO BE GRADE 60.

PIER PILING WAS DESIGNED FOR HL-93 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.



**PILE ORIENTATION DETAIL FOR TYPE 3 TRESTLE BENT PILES**

03-09 LATEST REVISION DATE	<i>Thomas C. McQuinn</i> APPROVED BY BRIDGE ENGINEER	<p><b>Iowa Department of Transportation Highway Division</b></p>	<p>STANDARD DESIGN - 24' ROADWAY, 3 SPAN BRIDGES</p> <p><b>CONTINUOUS CONCRETE SLAB BRIDGES</b></p> <p>NOVEMBER, 2006</p>
		<p>MONOLITHIC PIER CAP DETAILS ALL BRIDGES</p> <p>SHEET 1 OF 2</p>	<p>J24-23-06</p>