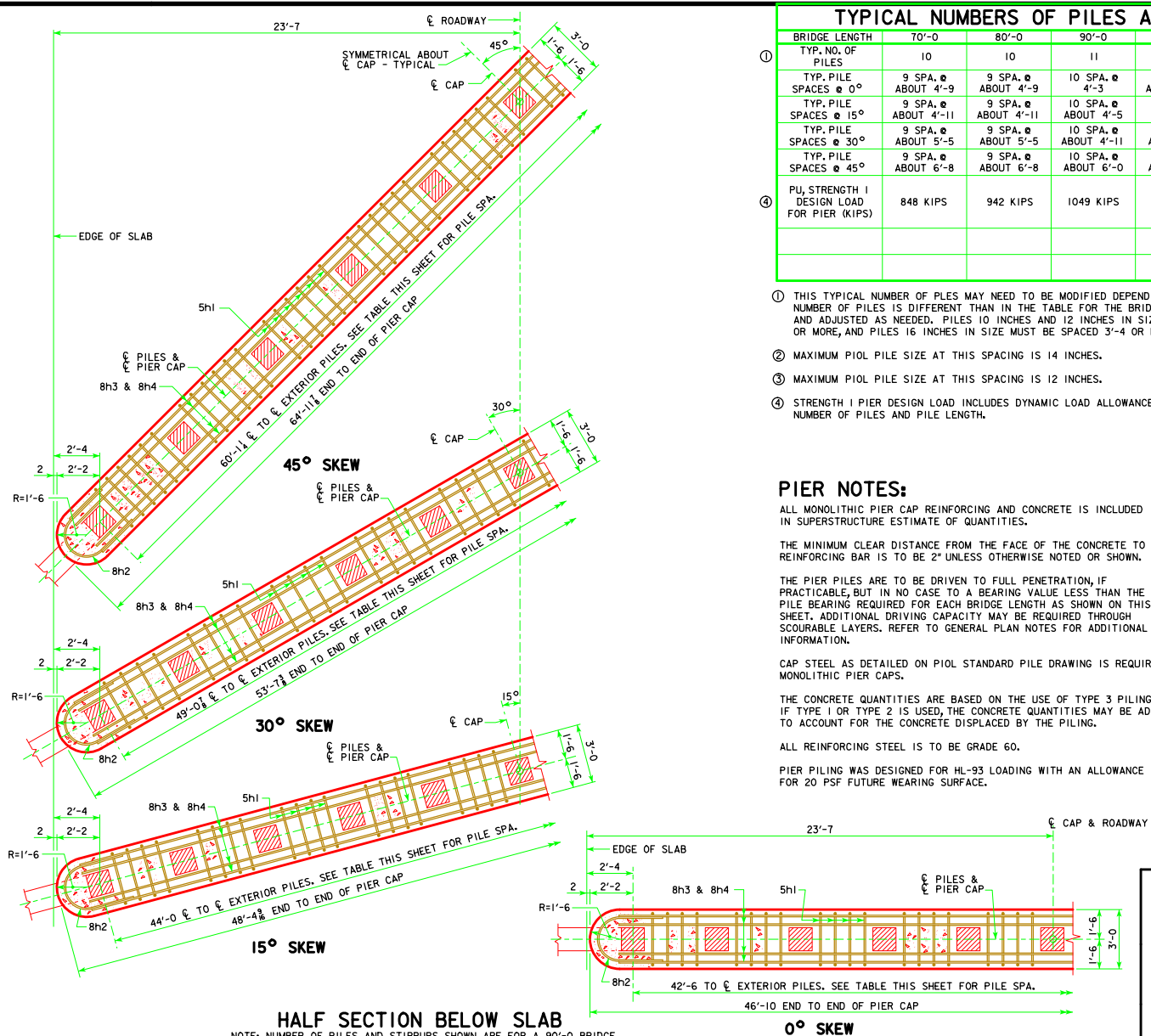


REVISED 06-13 - REVISION FOR LRFD PILE DESIGN.



HALF SECTION BELOW SLAB

NOTE: NUMBER OF PILES AND STIRRUPS SHOWN ARE FOR A 90'-0 BRIDGE. CAP DIMENSIONS ARE TYPICAL FOR ALL BRIDGES.

TYPICAL NUMBERS OF PILES AND SPACINGS AND FACTORED PIER LOADS									
BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
① TYP. NO. OF PILES	10	10	11	12	13	14	16	17	18
TYP. PILE SPACES @ 0°	9 SPA. @ ABOUT 4'-9	9 SPA. @ ABOUT 4'-9	10 SPA. @ 4'-3	11 SPA. @ ABOUT 3'-10	12 SPA. @ ABOUT 3'-6	② 13 SPA. @ ABOUT 3'-3	③ 15 SPA. @ 2'-10	④ 16 SPA. @ ABOUT 2'-8	⑤ 17 SPA. @ 2'-6
TYP. PILE SPACES @ 15°	9 SPA. @ ABOUT 4'-11	9 SPA. @ ABOUT 4'-11	10 SPA. @ ABOUT 4'-5	11 SPA. @ 4'-0	12 SPA. @ 3'-8	13 SPA. @ ABOUT 3'-5	② 15 SPA. @ ABOUT 2'-11	④ 16 SPA. @ 2'-9	⑤ 17 SPA. @ ABOUT 2'-7
TYP. PILE SPACES @ 30°	9 SPA. @ ABOUT 5'-5	9 SPA. @ ABOUT 5'-5	10 SPA. @ ABOUT 4'-11	11 SPA. @ ABOUT 4'-6	12 SPA. @ ABOUT 4'-1	13 SPA. @ ABOUT 3'-9	② 15 SPA. @ ABOUT 3'-3	④ 16 SPA. @ ABOUT 3'-1	⑤ 17 SPA. @ ABOUT 2'-11
TYP. PILE SPACES @ 45°	9 SPA. @ ABOUT 6'-8	9 SPA. @ ABOUT 6'-8	10 SPA. @ ABOUT 6'-0	11 SPA. @ ABOUT 5'-6	12 SPA. @ ABOUT 5'-0	13 SPA. @ ABOUT 4'-7	15 SPA. @ ABOUT 4'-0	16 SPA. @ ABOUT 3'-9	17 SPA. @ ABOUT 3'-6
④ PU, STRENGTH I DESIGN LOAD FOR PIER (KIPS)	848 KIPS	942 KIPS	1049 KIPS	1166 KIPS	1280 KIPS	1415 KIPS	1549 KIPS	1689 KIPS	1846 KIPS

- ① THIS TYPICAL NUMBER OF PILES MAY NEED TO BE MODIFIED DEPENDING ON SELECTED P10L PILE TYPE AND SIZE, HEIGHT, AND RESISTANCE. IF THE NUMBER OF PILES IS DIFFERENT THAN IN THE TABLE FOR THE BRIDGE LENGTH, THE NUMBER OF 5d1 BARS AND OTHER QUANTITIES NEED TO BE CHECKED AND ADJUSTED AS NEEDED. PILES 10 INCHES AND 12 INCHES IN SIZE MUST BE SPACED 2'-6 OR MORE, PILES 14 INCHES IN SIZE MUST BE SPACED 2'-11 OR MORE, AND PILES 16 INCHES IN SIZE MUST BE SPACED 3'-4 OR MORE.
- ② MAXIMUM P10L PILE SIZE AT THIS SPACING IS 14 INCHES.
- ③ MAXIMUM P10L PILE SIZE AT THIS SPACING IS 12 INCHES.
- ④ STRENGTH I PIER DESIGN LOAD INCLUDES DYNAMIC LOAD ALLOWANCE (1M), AND PIER CAP WEIGHT IS BASED ON 45° SKEW. USE THIS PU FOR DETERMINING NUMBER OF PILES AND PILE LENGTH.

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.

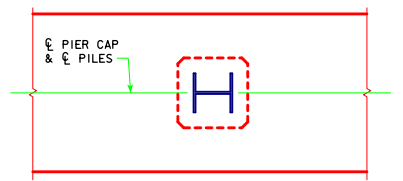
THE PIER PILES ARE TO BE DRIVEN TO FULL PENETRATION, IF PRACTICABLE, BUT IN NO CASE TO A BEARING VALUE LESS THAN THE PILE BEARING REQUIRED FOR EACH BRIDGE LENGTH AS SHOWN ON THIS SHEET. ADDITIONAL DRIVING CAPACITY MAY BE REQUIRED THROUGH SCOURABLE LAYERS. REFER TO GENERAL PLAN NOTES FOR ADDITIONAL INFORMATION.

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 PSF FUTURE WEARING SURFACE.



PILE ORIENTATION DETAIL FOR TYPE 3 TRESTLE BENT PILES

LATEST REVISION DATE
06-13
APPROVED BY BRIDGE ENGINEER
Thomas E. M. Donald

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 44' ROADWAY, 3 SPAN BRIDGES
CONTINUOUS CONCRETE SLAB BRIDGES
NOVEMBER, 2006

MONOLITHIC PIER CAP DETAILS ALL BRIDGES	J44-25-06
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