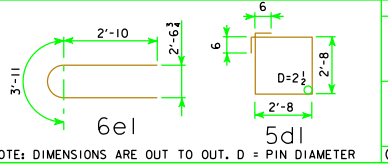
BILL OF REINFORCING STEEL - ONE PIER

BRIDGE LENGTH			70'-0 BRIDGE			80'-0 BRIDGE			90'-0 BRIDGE			100'-0 BRIDGE			110'-0 BRIDGE			120'-0 BRIDGE			130'-0 BRIDGE			140'-0 BRIDGE			150'-0 BRIDGE		
MARK	SKEW	SHAPE	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT	NO.	LENGTH	WEIGHT
6c1	0°		10	29'-10	448	10	29'-10	448	10	29'-10	448	10	29'-10	448	10	29'-10	448	10	29'-10	448	10	29'-10	448	10	29'-10	448	10	29'-10	448
	15°		10	30'-11	464	10	30'-11	464	10	30'-11	464	10	30'-11	464	10	30'-11	464	10	30'-11	464	10	30'-11	464	10	30'-11	464	10	30'-11	464
	30°		10	34'-6	518	10	34'-6	518	10	34'-6	518	10	34'-6	518	10	34'-6	518	10	34'-6	518	10	34'-6	518	10	34'-6	518	10	34'-6	518
	45°		20	22'-6	676	20	22'-6	676	20	22'-6	676	20	22'-6	676	20	22'-6	676	20	22'-6	676	20	22'-6	676	20	22'-6	676	20	22'-6	676
5d1	0°		20	11'-8	244	23	11'-8	280	26	11'-8	317	26	11'-8	317	20	11'-8	244	22	11'-8	268	24	11'-8	292	24	11'-8	292	24	11'-8	292
	15°		26	11'-8	317	23	11'-8	280	26	11'-8	317	26	11'-8	317	20	11'-8	244	22	11'-8	268	24	11'-8	292	24	11'-8	292	24	11'-8	292
	30°		26	11'-8	317	23	11'-8	280	34	11'-8	414	34	11'-8	414	29	11'-8	353	22	11'-8	268	24	11'-8	292	24	11'-8	292	24	11'-8	292
	45°		32	11'-8	390	30	11'-8	365	34	11'-8	414	34	11'-8	414	29	11'-8	353	32	11'-8	390	35	11'-8	426	35	11'-8	426	35	11'-8	426
6e1	ALL		6	9'-7	86	6	9'-7	86	6	9'-7	86	6	9'-7	86	6	9'-7	86	6	9'-7	86	6	9'-7	86	6	9'-7	86	6	9'-7	86

BENT BAR DETAILS



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

ESTIMATED QUANTITIES - ONE PIER

BRIDGE LENGTH	SKEW	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
STRUCTURAL CONCRETE (CU. YDS.)	0°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
	15°	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
	30°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
	45°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
REINFORCING STEEL (LBS.)	0°	778	814	851	851	778	802	826	826	826
	15°	867	830	867	867	794	818	842	842	842
	30°	921	884	1018	1018	957	872	896	896	896
	45°	1152	1127	1176	1176	1115	1152	1188	1188	1188
④ PILING (NO.)	ALL	7	8	9	9	10	11	12	12	12

APPROX. PILE SPACING, BEARING & PIER REACTION TABLE

BRIDGE LENGTH	70'-0	80'-0	90'-0	100'-0	110'-0	120'-0	130'-0	140'-0	150'-0
0° SKEW	6 SPA. @ 4'-9	7 SPA. @ ABOUT 4'-1(-)	8 SPA. @ ABOUT 3'-7(-)	8 SPA. @ ABOUT 3'-7(-)	9 SPA. @ 3'-2	10 SPA. @ ABOUT 2'-10(+)	11 SPA. @ ABOUT 2'-7(+)	11 SPA. @ ABOUT 2'-7(+)	11 SPA. @ ABOUT 2'-7(+)
15° SKEW	6 SPA. @ ABOUT 4'-11(+)	7 SPA. @ ABOUT 4'-3(-)	8 SPA. @ ABOUT 3'-8(+)	8 SPA. @ ABOUT 3'-8(+)	9 SPA. @ ABOUT 3'-3(+)	10 SPA. @ ABOUT 2'-11(+)	11 SPA. @ ABOUT 2'-8(+)	11 SPA. @ ABOUT 2'-8(+)	11 SPA. @ ABOUT 2'-8(+)
30° SKEW	6 SPA. @ ABOUT 5'-6(-)	7 SPA. @ ABOUT 4'-8(+)	8 SPA. @ ABOUT 4'-1(+)	8 SPA. @ ABOUT 4'-1(+)	9 SPA. @ ABOUT 3'-8(-)	10 SPA. @ ABOUT 3'-3(+)	11 SPA. @ ABOUT 3'-0(-)	11 SPA. @ ABOUT 3'-0(-)	11 SPA. @ ABOUT 3'-0(-)
45° SKEW	6 SPA. @ ABOUT 6'-9(-)	7 SPA. @ ABOUT 5'-9(+)	8 SPA. @ ABOUT 5'-0(+)	8 SPA. @ ABOUT 5'-0(+)	9 SPA. @ ABOUT 4'-6(-)	10 SPA. @ ABOUT 4'-0(+)	11 SPA. @ ABOUT 3'-8(-)	11 SPA. @ ABOUT 3'-8(-)	11 SPA. @ ABOUT 3'-8(-)
① BEARING PER PILE	34T	33T	33T	36T	36T	36T	36T	39T	43T
②③ BEARING PER PILE	31T	30T	30T	34T	33T	34T	34T	37T	41T
① MAXIMUM PIER REACTION	470 KIP	520 KIPS	577 KIPS	639 KIPS	701 KIPS	775 KIPS	847 KIPS	924 KIPS	1010 KIPS
② STRENGTH I REACTION	621 KIP	686 KIPS	761 KIPS	843 KIPS	923 KIPS	1019 KIPS	1114 KIPS	1213 KIPS	1324 KIPS

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 PIOL STANDARD PILE DRAWING. TYPE, SIZE, AND LENGTH OF PILES SHALL BE SPECIFIED ON THE PLAN. THE LARGER PILE SIZE SHOWN ON PIOL 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:

FOR SKEWED BRIDGES BOTTOM OF PIER CAP IS TO BE SLOPED TO COMPENSATE FOR GRADE. THEREFORE BOTTOM OF CAP ELEVATIONS WILL BE REQUIRED AT THE ℄ OF ROADWAY AND AT EACH EXTERIOR PILE.

THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES 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.

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.

REVISED 03-09 - CHANGED PILE STANDARD FROM PIOA TO PIOL IN NOTE 4.

03-09
LATEST REVISION DATE

Norman R. McDonald
APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES

SHEET 2 OF 2

J30-26-06