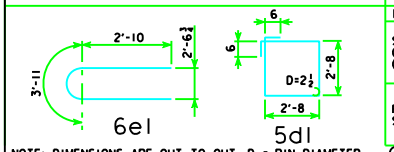
BILL OF REINFORCING STEEL - ONE PIER

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	23'-10	358	10	23'-10	358	10	23'-10	358	10	23'-10	358	10	23'-10	358	10	23'-10	358	10	23'-10	358	10	23'-10	358	10	23'-10	358
	15°		10	24'-8	370	10	24'-8	370	10	24'-8	370	10	24'-8	370	10	24'-8	370	10	24'-8	370	10	24'-8	370	10	24'-8	370	10	24'-8	370
	30°		10	27'-6	413	10	27'-6	413	10	27'-6	413	10	27'-6	413	10	27'-6	413	10	27'-6	413	10	27'-6	413	10	27'-6	413	10	27'-6	413
	45°		10	33'-9	507	10	33'-9	507	10	33'-9	507	10	33'-9	507	10	33'-9	507	10	33'-9	507	10	33'-9	507	10	33'-9	507	10	33'-9	507
5d1	0°		15	11'-8	183	18	11'-8	219	18	11'-8	219	14	11'-8	170	16	11'-8	195	16	11'-8	195	18	11'-8	219	18	11'-8	219	18	11'-8	219
	15°		15	11'-8	183	18	11'-8	219	18	11'-8	219	14	11'-8	170	16	11'-8	195	16	11'-8	195	18	11'-8	219	18	11'-8	219	18	11'-8	219
	30°		20	11'-8	243	18	11'-8	219	18	11'-8	219	21	11'-8	256	16	11'-8	195	16	11'-8	195	18	11'-8	219	18	11'-8	219	18	11'-8	219
	45°		25	11'-8	304	24	11'-8	292	24	11'-8	292	21	11'-8	256	24	11'-8	292	24	11'-8	292	27	11'-8	329	27	11'-8	329	27	11'-8	329
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°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
	15°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	30°	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	45°	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
REINFORCING STEEL (LBS.)	0°	627	663	663	614	639	639	663	663	663
	15°	639	675	675	626	651	651	675	675	675
	30°	742	718	718	755	694	694	718	718	718
	45°	897	885	885	849	885	885	922	922	922
④PILING (NO.)	ALL	6	7	7	8	9	9	10	10	10

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	5 SPA. @ 4'-6	6 SPA. @ 3'-9	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	6 SPA. @ ABOUT 3'-11	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	6 SPA. @ ABOUT 4'-4	6 SPA. @ ABOUT 4'-4	7 SPA. @ ABOUT 3'-9	8 SPA. @ ABOUT 3'-3	8 SPA @. ABOUT 3'-3	9 SPA. @ ABOUT 2'-11	9 SPA. @ ABOUT 2'-11	9 SPA. @ ABOUT 2'-11
45° SKEW	5 SPA. @ ABOUT 6'-4	6 SPA. @ ABOUT 5'-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 BEARING PER PILE-TONS	34	32	36	34	33	36	36	39	42
②③ BEARING PER PILE-TONS	31	29	32	31	31	34	33	36	39
① MAXIMUM PIER REACTION-TONS	407 KIP	446 KIPS	492 KIPS	542 KIPS	590 KIPS	648 KIPS	705 KIPS	764 KIPS	831 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 PIOA STANDARD PILE DRAWING. TYPE, SIZE, AND LENGTH OF PILES SHALL BE SPECIFIED ON THE PLAN. THE LARGER PILE SIZE SHOWN ON PIOA 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.

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 HS25 LOADING WITH AN ALLOWANCE FOR 20 LBS. PER SQ. FT. FUTURE WEARING SURFACE.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 24' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE SLAB BRIDGES

NOVEMBER, 2006

NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES

SHEET 2 OF 2

J24-26-06