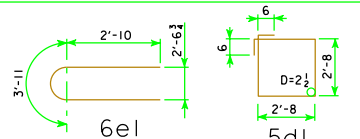


REVISED 03-09 - CHANGED PILE STANDARD FROM PI04 TO PI01 IN NOTE 4.

BILL OF EPOXY 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	25'-0	376	10	25'-0	376	10	25'-0	376	10	25'-0	376	10	25'-0	376	10	25'-0	376	10	25'-0	376	10	25'-0	376	10	25'-0	376
	15°	10	25'-9	387	10	25'-9	387	10	25'-9	387	10	25'-9	387	10	25'-9	387	10	25'-9	387	10	25'-9	387	10	25'-9	387	10	25'-9	387
	30°	10	28'-4	426	10	28'-4	426	10	28'-4	426	10	28'-4	426	10	28'-4	426	10	28'-4	426	10	28'-4	426	10	28'-4	426	10	28'-4	426
	45°	10	34'-0	511	10	34'-0	511	10	34'-0	511	10	34'-0	511	10	34'-0	511	10	34'-0	511	10	34'-0	511	10	34'-0	511	10	34'-0	511
6c2	0°	10	21'-11	330	10	21'-11	330	10	21'-11	330	10	21'-11	330	10	21'-11	330	10	21'-11	330	10	21'-11	330	10	21'-11	330	10	21'-11	330
	15°	10	22'-8	341	10	22'-8	341	10	22'-8	341	10	22'-8	341	10	22'-8	341	10	22'-8	341	10	22'-8	341	10	22'-8	341	10	22'-8	341
	30°	10	25'-4	381	10	25'-4	381	10	25'-4	381	10	25'-4	381	10	25'-4	381	10	25'-4	381	10	25'-4	381	10	25'-4	381	10	25'-4	381
	45°	10	31'-0	466	10	31'-0	466	10	31'-0	466	10	31'-0	466	10	31'-0	466	10	31'-0	466	10	31'-0	466	10	31'-0	466	10	31'-0	466
5d1	0°	38	11'-8	463	38	11'-8	463	42	11'-8	512	38	11'-8	463	41	11'-8	499	44	11'-8	536	34	11'-8	414	36	11'-8	439	36	11'-8	439
	15°	38	11'-8	463	38	11'-8	463	42	11'-8	512	38	11'-8	463	41	11'-8	499	44	11'-8	536	34	11'-8	414	36	11'-8	439	36	11'-8	439
	30°	47	11'-8	572	47	11'-8	572	42	11'-8	512	50	11'-8	609	41	11'-8	499	44	11'-8	536	50	11'-8	609	36	11'-8	439	36	11'-8	439
	45°	56	11'-8	682	56	11'-8	682	62	11'-8	755	50	11'-8	609	54	11'-8	658	58	11'-8	706	50	11'-8	609	53	11'-8	645	53	11'-8	645
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



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°	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4	15.4
	15°	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
	30°	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7
	45°	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
REINFORCING STEEL EPOXY COATED (LBS.)	0°	1255	1255	1304	1255	1291	1328	1206	1231	1231
	15°	1277	1277	1326	1277	1313	1350	1228	1253	1253
	30°	1465	1465	1405	1502	1392	1429	1502	1332	1332
	45°	1745	1745	1818	1672	1721	1769	1672	1708	1708
④ PILING (NO.)	ALL	10	10	11	13	14	15	17	18	18

APPROXIMATE 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	9 SPA. @ ABOUT 4'-9	9 SPA. @ ABOUT 4'-9	10 SPA. @ 4'-3	12 SPA. @ ABOUT 3'-6	13 SPA. @ ABOUT 3'-3	14 SPA. @ ABOUT 3'-0	16 SPA. @ ABOUT 2'-8	17 SPA. @ 2'-6	17 SPA. @ 2'-6
15° SKEW	9 SPA. @ ABOUT 4'-11	9 SPA. @ ABOUT 4'-11	10 SPA. @ ABOUT 4'-5	12 SPA. @ 3'-8	13 SPA. @ ABOUT 3'-5	14 SPA. @ ABOUT 3'-2	16 SPA. @ 2'-9	17 SPA. @ ABOUT 2'-7	17 SPA. @ ABOUT 2'-7
30° SKEW	9 SPA. @ ABOUT 5'-5	9 SPA. @ ABOUT 5'-5	10 SPA. @ ABOUT 4'-11	12 SPA. @ ABOUT 4'-1	13 SPA. @ 3'-9	14 SPA. @ ABOUT 3'-6	16 SPA. @ ABOUT 3'-1	17 SPA. @ ABOUT 2'-11	17 SPA. @ ABOUT 2'-11
45° SKEW	9 SPA. @ ABOUT 6'-8	9 SPA. @ ABOUT 6'-8	10 SPA. @ ABOUT 6'-0	12 SPA. @ ABOUT 5'-0	13 SPA. @ ABOUT 4'-7	14 SPA. @ ABOUT 4'-4	16 SPA. @ ABOUT 3'-9	17 SPA. @ ABOUT 3'-6	17 SPA. @ ABOUT 3'-6
① BEARING PER PILE-TONS	33	36	36	34	35	36	35	36	39
② BEARING PER PILE-TONS	30	34	34	32	33	34	33	34	38
① MAXIMUM PIER REACTION	644 KIPS	712 KIPS	792 KIPS	879 KIPS	966 KIPS	1069 KIPS	1172 KIPS	1280 KIPS	1401 KIPS
② STRENGTH I REACTION	848 KIPS	938 KIPS	1042 KIPS	1156 KIPS	1269 KIPS	1403 KIPS	1535 KIPS	1675 KIPS	1831 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 PI01 STANDARD PILE DRAWING. TYPE, SIZE, AND LENGTH OF PILES SHALL BE SPECIFIED ON THE PLAN. THE LARGER PILE SIZE SHOWN ON PI01 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 E OF ROADWAY AND AT EACH EXTERIOR PILE.

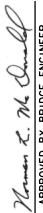
THE MINIMUM CLEAR DISTANCE FROM THE FACE OF THE CONCRETE TO NEAR REINFORCING BAR IS TO BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

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

03-09 LATEST REVISION DATE	 APPROVED BY BRIDGE ENGINEER	 Iowa Department of Transportation Highway Division	
		STANDARD DESIGN - 44' ROADWAY, 3 SPAN BRIDGES CONTINUOUS CONCRETE SLAB BRIDGES NOVEMBER, 2006	
		NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES	J44-29-06