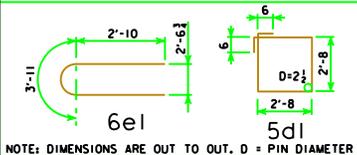


BILL OF EPOXY REINFORCING STEEL - ONE PIER

BRIDGE LENGTH MARK/SKEW/SHAPE	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					
	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'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346
15°	10	23'-8	356	10	23'-8	356	10	23'-8	356	10	23'-8	356	10	23'-8	356	10	23'-8	356	10	23'-8	356	10	23'-8	356	10	23'-8	356	10	23'-8	356
30°	10	26'-0	391	10	26'-0	391	10	26'-0	391	10	26'-0	391	10	26'-0	391	10	26'-0	391	10	26'-0	391	10	26'-0	391	10	26'-0	391	10	26'-0	391
45°	10	31'-2	469	10	31'-2	469	10	31'-2	469	10	31'-2	469	10	31'-2	469	10	31'-2	469	10	31'-2	469	10	31'-2	469	10	31'-2	469	10	31'-2	469
6c2 0°	10	19'-11	300	10	19'-11	300	10	19'-11	300	10	19'-11	300	10	19'-11	300	10	19'-11	300	10	19'-11	300	10	19'-11	300	10	19'-11	300	10	19'-11	300
15°	10	20'-7	310	10	20'-7	310	10	20'-7	310	10	20'-7	310	10	20'-7	310	10	20'-7	310	10	20'-7	310	10	20'-7	310	10	20'-7	310	10	20'-7	310
30°	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346	10	23'-0	346
45°	10	28'-2	424	10	28'-2	424	10	28'-2	424	10	28'-2	424	10	28'-2	424	10	28'-2	424	10	28'-2	424	10	28'-2	424	10	28'-2	424	10	28'-2	424
5d1 0°	36	11'-8	438	36	11'-8	438	30	11'-8	365	33	11'-8	402	36	11'-8	438	26	11'-8	317	28	11'-8	341	30	11'-8	365	30	11'-8	365	30	11'-8	365
15°	36	11'-8	438	36	11'-8	438	30	11'-8	365	33	11'-8	402	36	11'-8	438	26	11'-8	317	28	11'-8	341	30	11'-8	365	30	11'-8	365	30	11'-8	365
30°	36	11'-8	438	36	11'-8	438	40	11'-8	487	44	11'-8	536	36	11'-8	438	39	11'-8	475	42	11'-8	511	30	11'-8	365	30	11'-8	365	30	11'-8	365
45°	54	11'-8	657	54	11'-8	657	50	11'-8	609	44	11'-8	536	48	11'-8	584	52	11'-8	633	42	11'-8	511	45	11'-8	548	45	11'-8	548	45	11'-8	548
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	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°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
	15°	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
	30°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
REINFORCING STEEL EPOXY COATED (LBS.)	0°	1170	1170	1097	1134	1170	1049	1073	1097	1097
	15°	1190	1190	1117	1154	1190	1069	1093	1117	1117
	30°	1261	1261	1310	1359	1261	1298	1334	1188	1188
	45°	1636	1636	1588	1515	1563	1612	1490	1527	1527
④ PILING (NO.)	ALL	10	10	11	12	13	14	15	16	16

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'-3	9 SPA. @ ABOUT 4'-3	10 SPA. @ ABOUT 3'-10	11 SPA. @ ABOUT 3'-6	12 SPA. @ ABOUT 3'-2	13 SPA. @ ABOUT 2'-11	14 SPA. @ ABOUT 2'-9	15 SPA. @ ABOUT 2'-6	15 SPA. @ ABOUT 2'-6
15° SKEW	9 SPA. @ ABOUT 4'-5	9 SPA. @ ABOUT 4'-5	10 SPA. @ ABOUT 4'-0	11 SPA. @ ABOUT 3'-7	12 SPA. @ ABOUT 3'-4	13 SPA. @ ABOUT 3'-0	14 SPA. @ ABOUT 2'-10	15 SPA. @ ABOUT 2'-8	15 SPA. @ ABOUT 2'-8
30° SKEW	9 SPA. @ ABOUT 4'-11	9 SPA. @ ABOUT 4'-11	10 SPA. @ ABOUT 4'-5	11 SPA. @ ABOUT 4'-1	12 SPA. @ ABOUT 3'-8	13 SPA. @ ABOUT 3'-5	14 SPA. @ ABOUT 3'-2	15 SPA. @ ABOUT 3'-0	15 SPA. @ ABOUT 3'-0
45° SKEW	9 SPA. @ ABOUT 6'-1	9 SPA. @ ABOUT 6'-1	10 SPA. @ ABOUT 5'-5	11 SPA. @ ABOUT 4'-11	12 SPA. @ ABOUT 4'-6	13 SPA. @ ABOUT 4'-2	14 SPA. @ ABOUT 3'-11	15 SPA. @ ABOUT 3'-7	15 SPA. @ ABOUT 3'-7
① BEARING PER PILE-TONS	31	34	34	35	35	36	36	37	40
② BEARING PER PILE-TONS	28	31	31	32	32	33	34	35	38
③ MAXIMUM PIER REACTION	607 KIPS	667 KIPS	739 KIPS	817 KIPS	892 KIPS	983 KIPS	1072 KIPS	1166 KIPS	1272 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 P10A STANDARD PILE DRAWING. TYPE, SIZE, AND LENGTH OF PILES SHALL BE SPECIFIED ON THE PLAN. THE LARGER PILE SIZE SHOWN ON P10A 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 1/4 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 - 40' ROADWAY, 3 SPAN BRIDGES

**CONTINUOUS CONCRETE
SLAB BRIDGES**

NOVEMBER, 2006

NON-MONOLITHIC
PIER CAP DETAILS
ALL BRIDGES

J40-29-06