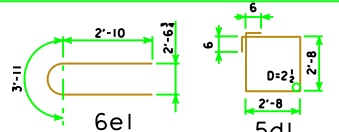


BILL OF REINFORCING STEEL - ONE PIER

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°	18	11'-8"	219	21	11'-8"	256	21	11'-8"	256	24	11'-8"	292	18	11'-8"	219	20	11'-8"	243	22	11'-8"	268	22	11'-8"	268	22	11'-8"	268
15°	24	11'-8"	292	21	11'-8"	256	21	11'-8"	256	24	11'-8"	292	18	11'-8"	219	20	11'-8"	243	22	11'-8"	268	22	11'-8"	268	22	11'-8"	268
30°	24	11'-8"	292	21	11'-8"	256	21	11'-8"	256	32	11'-8"	389	27	11'-8"	329	20	11'-8"	243	22	11'-8"	268	22	11'-8"	268	22	11'-8"	268
45°	30	11'-8"	365	28	11'-8"	341	28	11'-8"	341	32	11'-8"	389	27	11'-8"	329	30	11'-8"	365	33	11'-8"	402	33	11'-8"	402	33	11'-8"	402
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°	753	790	790	826	753	777	802	802	802
	15°	842	806	806	842	769	793	818	818	818
	30°	896	860	860	993	933	847	872	872	872
	45°	1127	1103	1103	1151	1091	1127	1164	1164	1164
① PILING (NO.)	ALL	7	8	8	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'-11" (-)	7 SPA. @ ABOUT 4'-11" (-)	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" (-)	7 SPA. @ ABOUT 4'-3" (-)	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" (+)	7 SPA. @ ABOUT 4'-8" (+)	8 SPA. @ ABOUT 4'-11" (+)	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" (+)	7 SPA. @ ABOUT 5'-9" (+)	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	33T	32T	35T	35T	34T	34T	34T	37T	41T
② BEARING PER PILE	30T	29T	33T	32T	32T	32T	32T	35T	39T
① MAXIMUM PIER REACTION	458 KIP	504 KIPS	559 KIPS	618 KIPS	676 KIPS	746 KIPS	814 KIPS	886 KIPS	967 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 $\frac{1}{2}$ 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 - 30' ROADWAY, 3 SPAN BRIDGES

CONTINUOUS CONCRETE
SLAB BRIDGES

NOVEMBER, 2006

NON-MONOLITHIC
PIER CAP DETAILS
ALL BRIDGES

J30-26-06

SHEET 2 OF 2