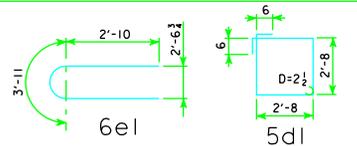


BILL OF REINFORCING STEEL - ONE PIER

MARK	BRIDGE LENGTH	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
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
	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
	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
	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
	0°			17	11'-8	207	20	11'-8	244	16	11'-8	195	16	11'-8	195	18	11'-8	219	20	11'-8	244	20	11'-8	244
5d1	15°			17	11'-8	207	20	11'-8	244	16	11'-8	195	16	11'-8	195	18	11'-8	219	20	11'-8	244	20	11'-8	244
	30°			22	11'-8	268	20	11'-8	244	23	11'-8	280	18	11'-8	219	20	11'-8	244	20	11'-8	244	20	11'-8	244
	45°			27	11'-8	329	26	11'-8	317	23	11'-8	280	23	11'-8	280	26	11'-8	317	29	11'-8	353	29	11'-8	353
	0°			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
	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

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
		0°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
STRUCTURAL CONCRETE (CU. YDS.)	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
	0°	651	688	639	639	663	688	688	688	688
REINFORCING STEEL (LBS.)	15°	663	700	651	651	675	700	700	700	700
	30°	767	743	779	779	718	743	743	743	743
	45°	922	910	873	873	910	946	946	946	946
④ PILING (NO.)	ALL	6	7	8	8	9	10	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	7 SPA. @ ABOUT 3'-3	7 SPA. @ ABOUT 3'-3	8 SPA. @ ABOUT 2'-10	9 SPA. @ 2'-6			
15° SKEW	5 SPA. @ ABOUT 4'-8	6 SPA. @ ABOUT 3'-11	7 SPA. @ ABOUT 3'-4	7 SPA. @ ABOUT 3'-4	8 SPA. @ ABOUT 2'-11	9 SPA. @ ABOUT 2'-7			
30° SKEW	5 SPA. @ ABOUT 5'-2	6 SPA. @ ABOUT 4'-4	7 SPA. @ ABOUT 3'-9	7 SPA. @ ABOUT 3'-9	8 SPA. @ 3'-3	9 SPA. @ ABOUT 2'-11			
45° SKEW	5 SPA. @ ABOUT 6'-4	6 SPA. @ ABOUT 5'-4	7 SPA. @ ABOUT 4'-7	7 SPA. @ ABOUT 4'-7	8 SPA. @ ABOUT 4'-0	9 SPA. @ ABOUT 3'-6			
① BEARING PER PILE-TONS	35	33	34	36	35	34	37	41	44
② BEARING PER PILE-TONS	32	31	30	33	32	32	35	38	42
① MAXIMUM PIER REACTION	419 KIP	461 KIPS	510 KIPS	563 KIPS	615 KIPS	677 KIPS	738 KIPS	802 KIPS	874 KIPS
② STRENGTH I REACTION	556 KIP	613 KIPS	677 KIPS	747 KIPS	815 KIPS	896 KIPS	975 KIPS	1059 KIPS	1152 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 $\frac{1}{2}$ 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. 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.

03-09 LATEST REVISION DATE	APPROVED BY BRIDGE ENGINEER	STANDARD DESIGN - 24' ROADWAY, 3 SPAN BRIDGES CONTINUOUS CONCRETE SLAB BRIDGES NOVEMBER, 2006
NON-MONOLITHIC PIER CAP DETAILS ALL BRIDGES		J24-26-06 SHEET 2 OF 2

REVISED 03-09 - CHANGED PILE STANDARD FROM PIOLA TO PIOL IN NOTE 4. REMOVED "TONS" FROM MAX. PIER REACTION.