

PIER-68-9-150-70.OUT

06-NOV-09
13:07:10

GEORGIA DEPARTMENT OF TRANSPORTATION
PRECONSTRUCTION DIVISION - OFFICE OF BRIDGE & STRUCTURAL DESIGN
THE ANALYSIS AND DESIGN OF PIERS FOR BRIDGES - V 4.2.07 - AASHTO SPECS 1984 INTERIM
REVISED: JUNE 30, 2008
68' CURB-CURB; 9 BEAMS; 150' SPAN; 70' TALL; BRIDGE 2A ; PIER 6

PROB. NO. 0001

DESIGN NO.	NO. CAN	NO. COL	NO. LLC	SKEW	ANG	F'C	FC	N	FY	FS	DESIGN DATA		CONC.	Z	* * * CAP			REINFORCING			STEEL			* * * CAP					
OPTIONS				D	M	S	PSI	PSI	PSI	PSI	EC	ES	STRAIN	FACT	MAIN	STR	MAX	MAX	MIN	MIN	MIN	TOP	MIN	TOP	MIN	TOP	MIN	TOP	
D	D	L	2	3	23	6-00-00	3500.	1400.	8.	60000.	24000.	3409.	29000.	0.0030	170.	11	5	16	16	11	2	2.00	4.00	3.00	2.00	4.00	3.00	2.00	
COLUMN	REINFORCING	STEEL	R	KL	OC	OF	CM	BD1	BD2	IMPACT	SOIL	WT	ALL.S.P.	MIN	MAX	EDGE	PILE	REBAR	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE	ALL.PILE
MIN.P	MAX.P	CL.SP.	CLEAR	MODE	COEF					%	KCF	KSF	PL	SP	PL	SP	DIST	DEPTH	CLEAR	CAPACITY	UPLIFT	P							
1.00	8.00	2.50	3.750	2	2.00	0.70	0.90	0.00	1.00	0.75	17.54	0.120	0.000	3.00	9.00	1.250	1.000	3.000	235.000	-9.999									

CAP DATA

CN	C	L	A	DE	BC	BE	DH	LH	XB1	XB2	XB3	XB4	XB5	XB6	XB7	XB8
11	L	11.000	3.000	4.000	6.000	6.000	2.000	8.000	7.274	5.274						
12	C	24.710	3.000	6.000	6.000		0.000	0.000	2.000	6.718	7.996	5.996				
13	3	SAME AS CAP SECTION 2														
14	4	SAME AS CANTILEVER 1														

COLUMN DATA

CN	P	I	T	S	HT	A	DT	BT	DB	BB	DL	FLEX	ND	NB	SZ	ND	NB	SZ	ND	NB	SZ	SLOPE	EP	AP			
21	1	C	T		70.000	0.000	6.000	6.000	6.000	6.000	4.000	0.000	6	6	11	6	6	11	17	17	11	16	17	11	0.000	0.000	0.000
22	1	2	SAME AS COLUMN 1																								
23	1	3	SAME AS COLUMN 1																								

FOOTING DATA

CN	S/P	B	D	T	DEL.B	DEL.D	DEL.T	R.B/D	R.D/B	S.HT.	NP	SYM.	BP	DP	SET.
31	P	8.000	8.000	3.000	0.500	0.500	0.250	1.000	1.000	2.500	4	3	0.000	0.000	0.000
32	2	SAME AS FOOTING 1													
33	3	SAME AS FOOTING 1													

GROUP II WIND

SUPERSTRUCTURE	AREA*STD.	WIND ON SUPERSTRUCTURE INTENSITIES										* WIND FORCE ARM		* WIND ON PIER		
TRANS.	LONG.	WIND	FT1	FL1	FT2	FL2	FT3	FL3	FT4	FL4	FT5	FL5	APT	APL	PT	PL
1463.	2925.	1	50	0	44	6	41	12	33	16	17	19	7.375	7.375	8.876	61.421

GROUP III WIND

STD.	* WIND ON SUPERSTRUCTURE	INTENSITIES										* WIND ON LIVE LOAD		* LENGTHS OF LL		* WIND ON LL										
WIND	FT1	FL1	FT2	FL2	FT3	FL3	FT4	FL4	FT5	FL5	* STD.	* WIND	FT1	FL1	FT2	FL2	FT3	FL3	FT4	FL4	FT5	FL5	TRANS.	LONGI.	APT	APL
1	50	0	44	6	41	12	33	16	17	19	1	100	0	88	12	82	24	66	32	34	38	150.0	300.0	15.583	15.583	

MISCELLANEOUS FORCES

CENTRI.	TRACTION	FORCE	AND	ARMS	EXPANSION	SHRINKAGE	STREAM	FLOW
FT	FL	APT	APL	COEFFICIENT	COEFFICIENT	PT	PL	PL
0.000	10.500	15.583	15.583	0.00018000	0.00044000	0.000	0.000	

DEAD LOAD SUPERSTRUCTURE AND LIVE LOAD CASES

I.D.	NL	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
D.L.	0	292.619 338.094	0.000 0.000	338.094 292.619	0.000	338.094	338.094	0.000	338.094	0.000	338.094	338.094	0.000
LL 1	1	91.097 0.000	0.000 0.000	53.242 0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL 2	2	91.097 0.000	0.000 0.000	109.076 0.000	0.000	88.506	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL 3	3	91.097 0.000	0.000 0.000	109.076 0.000	0.000	125.412	90.185	0.000	17.248	0.000	0.000	0.000	0.000
LL 4	4	91.097 0.000	0.000 0.000	109.076 0.000	0.000	125.412	109.004	0.000	107.433	0.000	35.335	0.000	0.000
LL 5	5	91.097 0.000	0.000 0.000	109.076 0.000	0.000	125.412	109.004	0.000	108.164	0.000	125.521	53.423	0.000
LL 6	1	0.000 53.242	0.000 0.000	0.000 91.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL 7	2	0.000 109.076	0.000 0.000	0.000 91.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	88.506	0.000
LL 8	3	0.000 109.076	0.000 0.000	0.000 91.097	0.000	0.000	0.000	0.000	17.248	0.000	90.185	125.412	0.000
LL 9	4	0.000 109.076	0.000 0.000	0.000 91.097	0.000	0.000	35.335	0.000	107.433	0.000	109.004	125.412	0.000
LL10	5	0.000 109.076	0.000 0.000	0.000 91.097	0.000	53.423	125.521	0.000	108.164	0.000	109.004	125.412	0.000
LL11	1	0.000 0.000	0.000 0.000	0.000 0.000	0.000	0.000	27.077	0.000	90.185	0.000	27.077	0.000	0.000

DEAD LOAD SUPERSTRUCTURE AND LIVE LOAD CASES

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I.D.	NL	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
LL12	2	0.000 0.000	0.000 0.000	0.000 0.000	0.000	45.164	117.262	0.000	99.175	0.000	27.077	0.000	0.000
LL13	3	0.000 0.000	0.000 0.000	0.000 0.000	0.000	45.164	117.262	0.000	108.164	0.000	117.262	45.164	0.000
LL14	4	0.000 0.000	0.000 0.000	72.350 0.000	0.000	117.154	117.262	0.000	108.164	0.000	117.262	45.164	0.000
LL15	5	0.000 72.350	0.000 0.000	72.350 0.000	0.000	117.154	117.262	0.000	108.164	0.000	117.262	117.154	0.000
LL16	2	0.000 0.000	0.000 0.000	0.000 0.000	0.000	0.036	90.185	0.000	108.236	0.000	90.185	0.036	0.000
LL17	3	0.000 0.000	0.000 0.000	18.123 0.000	0.000	90.221	126.216	0.000	108.236	0.000	90.185	0.036	0.000
LL18	4	0.000 18.123	0.000 0.000	18.123 0.000	0.000	90.221	126.216	0.000	108.236	0.000	126.216	90.221	0.000
LL19	5	36.211 18.123	0.000 0.000	108.309 0.000	0.000	108.164	126.216	0.000	108.236	0.000	126.216	90.221	0.000
LL20	2	91.097 53.242	0.000 0.000	53.242 91.097	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL21	3	91.097 53.242	0.000 0.000	109.076 91.097	0.000	88.506	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL22	4	91.097 109.076	0.000 0.000	109.076 91.097	0.000	88.506	0.000	0.000	0.000	0.000	0.000	88.506	0.000
LL23	5	91.097 109.076	0.000 0.000	109.076 91.097	0.000	125.412	90.185	0.000	17.248	0.000	0.000	88.506	0.000

□ COLUMN MOMENTS(KIP- FEET), SHEARS(KIPS), REACTIONS(KIPS)

LOAD	COL	TRANSVERSE							LONGITUDINAL			
		PC	MT	V	MB	RF	ML	MR	MT	V	MB	MF
UNIT F.AT CL. CAP	1	0.672	10.182	0.314	11.823	0.672	0.000	-10.182	1.333	0.333	23.333	23.333
	2	0.000	12.839	0.371	13.151	0.000	-6.419	-6.419	1.333	0.333	23.333	23.333
	3	-0.672	10.182	0.314	11.823	-0.672	-10.182	0.000	1.333	0.333	23.333	23.333
EXPANSION OF CAP	1	12.955	213.411	6.636	251.077	12.955	0.000	-213.411	0.000	0.000	0.000	0.000
	2	-25.910	0.000	0.000	0.000	-25.910	-106.705	106.705	0.000	0.000	0.000	0.000
	3	12.955	-213.411	-6.636	-251.077	12.955	213.411	0.000	0.000	0.000	0.000	0.000
SHRINKAGE OF CAP	1	-31.668	-521.670	-16.220	-613.745	-31.668	0.000	521.670	0.000	0.000	0.000	0.000
	2	63.335	0.000	0.000	0.000	63.335	260.835	-260.835	0.000	0.000	0.000	0.000
	3	-31.668	521.670	16.220	613.745	-31.668	-521.670	0.000	0.000	0.000	0.000	0.000
DEAD LOAD TOTAL	1	1087.660 1444.060	-76.747	-1.645	-38.373	1444.060	2395.210	-2318.464	0.000	0.000	0.000	0.000
	2	1147.845 1504.245	0.000	0.000	0.000	1504.245	2075.952	-2075.951	0.000	0.000	0.000	0.000
	3	1087.660 1444.060	76.747	1.645	38.373	1444.060	2318.464	-2395.210	0.000	0.000	0.000	0.000
TRAC. FORCE 1 LN	1	1.083	11.175	0.345	12.976	1.083	0.000	-11.175	-68.165	-3.481	-297.900	-297.900
	2	0.000	14.091	0.408	14.434	0.000	-7.046	-7.046	-68.165	-3.481	-297.900	-297.900
	3	-1.083	11.175	0.345	12.976	-1.083	-11.175	0.000	-68.165	-3.481	-297.900	-297.900
WIND ON SUBSTR.	1	5.963	90.376	2.790	104.941	5.963	0.000	-90.376	-81.895	-20.474	-1433.157	-1433.157
	2	0.000	113.956	3.296	116.730	0.000	-56.978	-56.978	-81.895	-20.474	-1433.157	-1433.157
	3	-5.963	90.376	2.790	104.941	-5.963	-90.376	0.000	-81.895	-20.474	-1433.157	-1433.157
GROUP 2 WIND 1 1	1	65.696	831.118	25.660	965.052	65.696	0.000	-831.118	-52.903	-17.925	-1235.947	-1235.947
	2	0.000	1047.958	30.306	1073.472	0.000	-523.979	-523.979	-52.903	-17.925	-1235.947	-1235.947
	3	-65.696	831.118	25.660	965.052	-65.696	-831.118	0.000	-52.903	-17.925	-1235.947	-1235.947
GROUP 2 WIND 1 2	1	65.696	831.118	25.660	965.052	65.696	0.000	-831.118	110.887	23.022	1630.366	1630.366
	2	0.000	1047.958	30.306	1073.472	0.000	-523.979	-523.979	110.887	23.022	1630.366	1630.366
	3	-65.696	831.118	25.660	965.052	-65.696	-831.118	0.000	110.887	23.022	1630.366	1630.366
GROUP 2 WIND 2 1	1	60.035	760.908	23.492	883.528	60.035	0.000	-760.907	-122.561	-24.049	-1709.776	-1709.776
	2	0.000	959.429	27.746	982.789	0.000	-479.715	-479.715	-122.561	-24.049	-1709.776	-1709.776
	3	-60.035	760.908	23.492	883.528	-60.035	-760.907	0.000	-122.561	-24.049	-1709.776	-1709.776
GROUP 2 WIND 2 2	1	57.022	723.550	22.339	840.150	57.022	0.000	-723.550	173.587	28.535	2056.865	2056.865
	2	0.000	912.325	26.384	934.538	0.000	-456.163	-456.163	173.587	28.535	2056.865	2056.865
	3	-57.022	723.550	22.339	840.150	-57.022	-723.550	0.000	173.587	28.535	2056.865	2056.865
GROUP 2 WIND 3 1	1	57.957	735.142	22.696	853.610	57.957	0.000	-735.142	-190.480	-30.020	-2171.773	-2171.773
	2	0.000	926.941	26.806	949.510	0.000	-463.471	-463.471	-190.480	-30.020	-2171.773	-2171.773
	3	-57.957	735.142	22.696	853.610	-57.957	-735.142	0.000	-190.480	-30.020	-2171.773	-2171.773
GROUP 2 WIND 3 2	1	51.932	660.427	20.390	766.854	51.932	0.000	-660.427	238.027	34.200	2495.197	2495.197
	2	0.000	832.733	24.082	853.008	0.000	-416.366	-416.366	238.027	34.200	2495.197	2495.197
	3	-51.932	660.427	20.390	766.854	-51.932	-660.427	0.000	238.027	34.200	2495.197	2495.197

□ COLUMN MOMENTS(KIP- FEET), SHEARS(KIPS), REACTIONS(KIPS)

LOAD	COL	TRANSVERSE							LONGITUDINAL			
		PC	MT	V	MB	RF	ML	MR	MT	V	MB	MF
GROUP 2 WIND 4 1	1	49.404	629.076	19.422	730.452	49.404	0.000	-629.076	-239.238	-34.306	-2503.436	-2503.436
	2	0.000	793.203	22.939	812.515	0.000	-396.601	-396.601	-239.238	-34.306	-2503.436	-2503.436
	3	-49.404	629.076	19.422	730.452	-49.404	-629.076	0.000	-239.238	-34.306	-2503.436	-2503.436
GROUP 2 WIND 4 2	1	41.371	529.455	16.346	614.777	41.371	0.000	-529.455	277.507	37.670	2763.753	2763.753
	2	0.000	667.591	19.306	683.845	0.000	-333.796	-333.796	277.507	37.670	2763.753	2763.753

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	3	-41.371	529.455	16.346	614.777	-41.371	-529.455	0.000	277.507	37.670	2763.753	2763.753
GROUP 2 WIND 5 1	1	31.042	401.378	12.392	466.060	31.042	0.000	-401.378	-281.605	-38.031	-2791.625	-2791.625
	2	0.000	506.098	14.636	518.420	0.000	-253.049	-253.049	-281.605	-38.031	-2791.625	-2791.625
	3	-31.042	401.378	12.392	466.060	-31.042	-401.378	0.000	-281.605	-38.031	-2791.625	-2791.625
GROUP 2 WIND 5 2	1	21.503	283.079	8.740	328.697	21.503	0.000	-283.079	301.319	39.764	2925.728	2925.728
	2	0.000	356.935	10.322	365.625	0.000	-178.467	-178.467	301.319	39.764	2925.728	2925.728
	3	-21.503	283.079	8.740	328.697	-21.503	-283.079	0.000	301.319	39.764	2925.728	2925.728
GROUP 3 WIND 1 1	1	34.435	401.230	12.387	465.889	34.435	0.000	-401.230	-5.636	-4.855	-326.055	-326.055
	2	0.000	505.912	14.631	518.229	0.000	-252.956	-252.956	-5.636	-4.855	-326.055	-326.055
	3	-34.435	401.230	12.387	465.889	-34.435	-401.230	0.000	-5.636	-4.855	-326.055	-326.055
GROUP 3 WIND 1 2	1	34.435	401.230	12.387	465.889	34.435	0.000	-401.230	43.501	7.429	533.839	533.839
	2	0.000	505.912	14.631	518.229	0.000	-252.956	-252.956	43.501	7.429	533.839	533.839
	3	-34.435	401.230	12.387	465.889	-34.435	-401.230	0.000	43.501	7.429	533.839	533.839
GROUP 3 WIND 2 1	1	31.341	365.771	11.293	424.716	31.341	0.000	-365.771	-51.132	-7.948	-575.708	-575.708
	2	0.000	461.202	13.338	472.431	0.000	-230.601	-230.601	-51.132	-7.948	-575.708	-575.708
	3	-31.341	365.771	11.293	424.716	-31.341	-365.771	0.000	-51.132	-7.948	-575.708	-575.708
GROUP 3 WIND 2 2	1	29.694	346.901	10.710	402.804	29.694	0.000	-346.901	84.454	10.214	758.558	758.558
	2	0.000	437.408	12.650	448.058	0.000	-218.704	-218.704	84.454	10.214	758.558	758.558
	3	-29.694	346.901	10.710	402.804	-29.694	-346.901	0.000	84.454	10.214	758.558	758.558
GROUP 3 WIND 3 1	1	30.206	352.760	10.891	409.607	30.206	0.000	-352.760	-95.493	-10.964	-819.128	-819.128
	2	0.000	444.795	12.863	455.625	0.000	-222.398	-222.398	-95.493	-10.964	-819.128	-819.128
	3	-30.206	352.760	10.891	409.607	-30.206	-352.760	0.000	-95.493	-10.964	-819.128	-819.128
GROUP 3 WIND 3 2	1	26.912	315.019	9.726	365.784	26.912	0.000	-315.019	126.542	13.075	989.511	989.511
	2	0.000	397.208	11.487	406.879	0.000	-198.604	-198.604	126.542	13.075	989.511	989.511
	3	-26.912	315.019	9.726	365.784	-26.912	-315.019	0.000	126.542	13.075	989.511	989.511
GROUP 3 WIND 4 1	1	25.531	299.191	9.237	347.406	25.531	0.000	-299.191	-127.339	-13.129	-993.875	-993.875
	2	0.000	377.250	10.910	386.435	0.000	-188.625	-188.625	-127.339	-13.129	-993.875	-993.875
	3	-25.531	299.191	9.237	347.406	-25.531	-299.191	0.000	-127.339	-13.129	-993.875	-993.875
GROUP 3 WIND 4 2	1	21.140	248.870	7.684	288.975	21.140	0.000	-248.870	152.330	14.829	1131.013	1131.013
	2	0.000	313.800	9.075	321.441	0.000	-156.900	-156.900	152.330	14.829	1131.013	1131.013
	3	-21.140	248.870	7.684	288.975	-21.140	-248.870	0.000	152.330	14.829	1131.013	1131.013
GROUP 3 WIND 5 1	1	15.496	184.191	5.687	213.873	15.496	0.000	-184.191	-155.009	-15.011	-1145.713	-1145.713
	2	0.000	232.247	6.716	237.901	0.000	-116.123	-116.123	-155.009	-15.011	-1145.713	-1145.713
	3	-15.496	184.191	5.687	213.873	-15.496	-184.191	0.000	-155.009	-15.011	-1145.713	-1145.713

□ COLUMN MOMENTS(KIP- FEET), SHEARS(KIPS), REACTIONS(KIPS)

		TRANSVERSE									LONGITUDINAL		
LOAD	COL	PC	MT	V	MB	RF	ML	MR	MT	V	MB	MF	
GROUP 3 WIND 5 2	1	10.281	124.435	3.842	144.487	10.281	0.000	-124.435	167.883	15.886	1216.360	1216.360	
	2	0.000	156.900	4.537	160.720	0.000	-78.450	-78.450	167.883	15.886	1216.360	1216.360	
	3	-10.281	124.435	3.842	144.487	-10.281	-124.435	0.000	167.883	15.886	1216.360	1216.360	
LIVE LOAD LL 1	1	171.670	-153.749	-2.962	-53.575	171.670	662.640	-508.891	0.000	0.000	0.000	0.000	
	2	-29.730	88.016	2.219	67.307	-29.730	-166.447	78.431	0.000	0.000	0.000	0.000	
	3	2.400	19.135	0.743	32.866	2.400	-19.135	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 2	1	280.920	-65.390	-1.214	-19.579	280.920	662.640	-597.250	0.000	0.000	0.000	0.000	
	2	10.047	15.984	0.530	21.108	10.047	17.377	-33.360	0.000	0.000	0.000	0.000	
	3	-2.288	23.175	0.684	24.703	-2.288	-23.175	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 3	1	292.941	-29.808	0.710	19.880	292.941	596.376	-626.183	0.000	0.000	0.000	0.000	
	2	107.036	-80.570	-1.655	-35.308	107.036	293.304	-212.734	0.000	0.000	0.000	0.000	
	3	-10.261	40.809	0.946	25.381	-10.261	-40.809	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 4	1	245.503	-28.471	0.676	18.841	245.503	496.980	-525.451	0.000	0.000	0.000	0.000	
	2	190.634	-56.776	-1.151	-23.782	190.634	326.665	-269.889	0.000	0.000	0.000	0.000	
	3	-3.119	19.093	0.475	14.152	-3.119	-19.093	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 5	1	238.012	11.279	0.409	17.360	238.012	496.980	-508.259	0.000	0.000	0.000	0.000	
	2	265.476	32.436	0.863	27.939	265.476	494.572	-527.008	0.000	0.000	0.000	0.000	
	3	37.784	-67.157	-1.272	-21.857	37.784	67.157	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 6	1	2.400	-19.135	-0.743	-32.866	2.400	0.000	19.135	0.000	0.000	0.000	0.000	
	2	-29.730	88.016	-2.219	-67.307	-29.730	-78.431	166.447	0.000	0.000	0.000	0.000	
	3	171.670	153.749	2.962	53.575	171.670	508.891	-662.640	0.000	0.000	0.000	0.000	
LIVE LOAD LL 7	1	-2.288	-23.175	-0.684	-24.703	-2.288	0.000	23.175	0.000	0.000	0.000	0.000	
	2	10.047	-15.984	-0.530	-21.108	10.047	33.360	-17.377	0.000	0.000	0.000	0.000	
	3	280.920	65.390	1.214	19.579	280.920	597.250	-662.640	0.000	0.000	0.000	0.000	
LIVE LOAD LL 8	1	-10.261	-40.809	-0.946	-25.381	-10.261	0.000	40.809	0.000	0.000	0.000	0.000	
	2	107.036	-80.570	1.655	35.308	107.036	212.734	-293.304	0.000	0.000	0.000	0.000	
	3	292.941	-29.808	-0.710	-19.880	292.941	626.183	-596.376	0.000	0.000	0.000	0.000	
LIVE LOAD LL 9	1	-3.119	-19.093	-0.475	-14.152	-3.119	0.000	19.093	0.000	0.000	0.000	0.000	
	2	190.634	-56.776	1.151	23.782	190.634	269.889	-326.665	0.000	0.000	0.000	0.000	
	3	245.503	-28.471	-0.676	-18.841	245.503	525.451	-496.980	0.000	0.000	0.000	0.000	
LIVE LOAD LL10	1	37.784	67.157	1.272	21.857	37.784	0.000	-67.157	0.000	0.000	0.000	0.000	
	2	265.476	32.436	-0.863	-27.939	265.476	527.008	-494.572	0.000	0.000	0.000	0.000	
	3	238.012	-11.279	-0.409	-17.360	238.012	508.259	-496.980	0.000	0.000	0.000	0.000	
LIVE LOAD LL11	1	4.545	12.364	0.265	6.182	4.545	0.000	-12.364	0.000	0.000	0.000	0.000	
	2	135.249	0.000	0.000	0.000	135.249	116.570	-116.570	0.000	0.000	0.000	0.000	
	3	4.545	-12.364	-0.265	-6.182	4.545	12.364	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL12	1	54.098	119.118	2.431	51.023	54.098	0.000	-119.118	0.000	0.000	0.000	0.000	
	2	239.585	-112.227	-2.527	-64.650	239.585	442.239	-330.012	0.000	0.000	0.000	0.000	
	3	-5.006	10.182	0.096	-3.445	-5.006	-10.182	0.000	0.000	0.000	0.000	0.000	

□ COLUMN MOMENTS(KIP- FEET), SHEARS(KIPS), REACTIONS(KIPS)

TRANSVERSE

*

LONGITUDINAL

LOAD	COL	PIER-68-9-150-70.OUT											
		PC	MT	V	MB	RF	ML	MR	MT	V	MB	MF	
LIVE LOAD LL13	1	40.093	86.915	1.862	43.457	40.093	0.000	-86.915	0.000	0.000	0.000	0.000	
	2	309.528	0.000	0.000	0.000	309.528	590.113	-590.113	0.000	0.000	0.000	0.000	
	3	40.093	-86.915	-1.862	-43.457	40.093	86.915	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL14	1	120.260	126.332	2.618	56.954	120.260	0.000	-126.332	0.000	0.000	0.000	0.000	
	2	282.206	-43.943	-1.030	-28.184	282.206	603.901	-559.958	0.000	0.000	0.000	0.000	
	3	117.400	-69.964	-1.588	-41.194	117.400	69.964	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL15	1	117.400	123.867	2.654	61.934	117.400	0.000	-123.867	0.000	0.000	0.000	0.000	
	2	306.471	0.000	0.000	0.000	306.471	672.099	-672.099	0.000	0.000	0.000	0.000	
	3	117.400	-123.867	-2.654	-61.934	117.400	123.867	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL16	1	15.157	41.215	0.883	20.607	15.157	0.000	-41.215	0.000	0.000	0.000	0.000	
	2	258.364	0.000	0.000	0.000	258.364	388.380	-388.380	0.000	0.000	0.000	0.000	
	3	15.157	-41.215	-0.883	-20.607	15.157	41.215	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL17	1	86.956	140.298	2.856	59.609	86.956	0.000	-140.298	0.000	0.000	0.000	0.000	
	2	295.991	-93.196	-2.148	-57.138	295.991	601.494	-508.298	0.000	0.000	0.000	0.000	
	3	6.769	-26.023	-0.708	-23.551	6.769	26.023	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL18	1	66.736	107.690	2.308	53.845	66.736	0.000	-107.690	0.000	0.000	0.000	0.000	
	2	299.546	0.000	0.000	0.000	299.546	633.542	-633.542	0.000	0.000	0.000	0.000	
	3	66.736	-107.690	-2.308	-53.845	66.736	107.690	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL19	1	177.803	75.288	1.690	43.042	177.803	197.549	-272.837	0.000	0.000	0.000	0.000	
	2	296.730	15.287	0.405	13.041	296.730	611.870	-627.157	0.000	0.000	0.000	0.000	
	3	66.738	-101.371	-2.095	-45.288	66.738	101.371	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL20	1	174.069	-172.884	-3.705	-86.442	174.069	662.640	-489.756	0.000	0.000	0.000	0.000	
	2	-59.460	0.000	0.000	0.000	-59.460	-244.878	244.878	0.000	0.000	0.000	0.000	
	3	174.069	172.884	3.705	86.442	174.069	489.756	-662.640	0.000	0.000	0.000	0.000	
LIVE LOAD LL21	1	254.988	-76.072	-1.761	-47.201	254.988	596.376	-520.304	0.000	0.000	0.000	0.000	
	2	-17.715	-64.829	-1.520	-41.580	-17.715	-54.949	119.778	0.000	0.000	0.000	0.000	
	3	152.443	159.231	3.281	70.451	152.443	437.144	-596.376	0.000	0.000	0.000	0.000	
LIVE LOAD LL22	1	208.974	-66.423	-1.423	-33.212	208.974	496.980	-430.556	0.000	0.000	0.000	0.000	
	2	15.070	0.000	0.000	0.000	15.070	38.053	-38.053	0.000	0.000	0.000	0.000	
	3	208.974	66.423	1.423	33.212	208.974	430.556	-496.980	0.000	0.000	0.000	0.000	
LIVE LOAD LL23	1	242.401	7.459	0.079	-1.960	242.401	496.980	-504.438	0.000	0.000	0.000	0.000	
	2	96.732	-79.129	-1.777	-45.254	96.732	269.441	-190.311	0.000	0.000	0.000	0.000	
	3	202.139	83.050	1.698	35.835	202.139	413.930	-496.980	0.000	0.000	0.000	0.000	

CAP ANALYSIS AND DESIGN DATA

CAP MOMENTS AND SHEARS

POINT	D.L.TOT.	MOMENTS(KIP-Feet)						SHEARS(KIPS)					
		G1 MAX.+	G1 MAX.-	G2 MAX.+	G2 MAX.-	G3 MAX.+	G3 MAX.-	DL T.LT	DL T.RT	G1 + LT	G1 + RT	G1 - LT	G1 - RT
P 1	-35.008	-35.008	-35.008	-35.008	-35.008	-35.008	-35.008	-19.468	-399.873	-19.468	-399.873	-19.468	-597.644
P 2	-2231.284	-2231.284	-3274.332	-2231.284	-2231.284	-2231.284	-2855.864	-434.225	-434.225	-434.225	-434.225	-631.996	-631.996
C 1L	-3113.773	-3113.773	-4552.364	-3113.773	-3113.773	-3113.773	-3975.205	-448.265		-448.265		-646.036	
C 1R	-3014.003	-2925.406	-4373.447	-1933.550	-4094.456	-2400.126	-4388.866		526.170		771.027		503.894
P 4	-1975.702	-1923.741	-2961.834	-1037.833	-2913.571	-1462.514	-3031.576	512.130	512.130	756.987	756.987	489.854	489.854
P 5	1306.379	2338.874	718.857	1765.308	847.450	2162.854	726.846	464.970	25.448	709.826	89.992	442.694	-28.236
P 6	1285.446	2205.840	1001.719	1396.567	1174.324	1893.213	1057.870	-30.684	-470.206	33.860	-405.662	-84.368	-739.732
P 7	-1660.102	-1257.561	-2629.997	-1121.514	-2198.691	-1144.567	-2528.043	-512.298	-512.298	-447.754	-447.754	-781.824	-781.824
C 2L	-2698.737	-2167.107	-4157.863	-2017.565	-3379.909	-2033.235	-3935.655	-526.338		-461.794		-795.864	
C 2R	-2698.737	-2167.107	-4157.863	-2017.564	-3379.909	-2033.234	-3935.655		526.338		770.954		461.794
P 9	-1660.101	-1257.559	-2629.995	-1121.512	-2198.689	-1144.565	-2528.042	512.298	512.298	756.914	756.914	447.754	447.754
P10	1285.446	2059.168	1001.720	1396.568	1174.325	1806.432	1057.871	470.206	30.684	714.822	84.368	405.662	-33.860
P11	1306.380	2232.458	718.857	1765.309	847.450	2105.611	726.846	-25.448	-464.970	28.236	-442.694	-89.992	-709.826
P12	-1975.702	-1923.741	-2961.834	-1037.833	-2913.570	-1462.513	-3031.576	-512.130	-512.130	-489.854	-489.854	-756.987	-756.987
C 3L	-3014.003	-2925.406	-4373.447	-1933.550	-4094.456	-2400.126	-4388.866	-526.171		-503.894		-771.027	
C 3R	-3113.773	-3113.773	-4552.364	-3113.773	-3113.773	-3113.773	-3975.205		448.265		646.036		448.265
P14	-2231.284	-2231.284	-3274.331	-2231.284	-2231.284	-2231.284	-2855.864	434.225	434.225	631.996	631.996	434.225	434.225
P15	-35.008	-35.008	-35.008	-35.008	-35.008	-35.008	-35.008	399.873	19.468	597.644	19.468	399.873	19.468

PT.	M+ UNF. K-FT.	M- UNF. K-FT.	TOP REINFORCE.		BOT.REINFORCE.		CAP DESIGN DATA LEFT STIRRUPS		RIGHT STIRRUPS		D IN.	FC PSI	PS %	FS/FF RATIO	FS/FZ RATIO
			AS	NO.SIZE	AS	NO.SIZE	M.SP.	AV/IN BAR&SPAC	M.SP.	AV/IN BAR&SPAC					
P 1	-26.929	-26.929	3.12	2 # 11	3.12	2 # 11	0.00	0.000 #5@ 0.00	24.00	0.068 #5@ 9.14	59.17		0.08	0.000	0.105
P 2	-1716.373	-2196.818	10.84	7 # 11	3.12	2 # 11	24.00	0.060 #5@10.33	24.00	0.060 #5@10.33	72.00		0.23	0.594	1.338
C 1	-2277.655	-3057.850	15.19	10 # 11	3.12	2 # 11	24.00	0.060 #5@10.33	24.00	0.078 #5@ 7.93	72.00		0.33	0.654	1.170
P 4	-1495.837	-1974.000	10.02	7 # 11	3.12	2 # 11	24.00	0.074 #5@ 8.36	24.00	0.074 #5@ 8.36	72.00		0.20	0.542	1.203
P 5	1480.492	734.284	3.12	2 # 11	9.10	6 # 11	24.00	0.061 #5@10.21	0.00	0.000 #5@ 0.00	72.00		0.18	0.791	1.103

PT.	M+ UNF. K-FT.	M- UNF. K-FT.	TOP REINFORCE.		BOT.REINFORCE.		CAP DESIGN DATA LEFT STIRRUPS		RIGHT STIRRUPS		D IN.	FC PSI	PS %	FS/FF RATIO	FS/FZ RATIO
			AS	NO.SIZE	AS	NO.SIZE	M.SP.	AV/IN BAR&SPAC	M.SP.	AV/IN BAR&SPAC					

P	6	1412.754	858.115	3.12	2 # 11	9.10	6 # 11	0.00	0.000	PIER-68-9-150-70.OUT #5@ 0.00	24.00	0.069	#5@ 8.95	72.00	0.18	0.615	1.053
P 7	-1091.584	-1723.752	9.10	6 # 11	3.12	2 # 11	24.00	0.081	#5@ 7.63	24.00	0.081	#5@ 7.63	72.00	0.18	0.767	1.285	
C 2	-1831.073	-2748.050	13.84	9 # 11	3.12	2 # 11	24.00	0.085	#5@ 7.27	24.00	0.078	#5@ 7.93	72.00	0.30	0.796	1.206	
P 9	-1091.583	-1723.751	9.10	6 # 11	3.12	2 # 11	24.00	0.074	#5@ 8.36	24.00	0.074	#5@ 8.36	72.00	0.18	0.767	1.285	
P10	1345.194	858.116	3.12	2 # 11	9.01	6 # 11	24.00	0.062	#5@ 9.98	0.00	0.000	#5@ 0.00	72.00	0.18	0.540	1.003	
P11	1431.475	734.284	3.12	2 # 11	9.10	6 # 11	0.00	0.000	#5@ 0.00	24.00	0.061	#5@10.21	72.00	0.18	0.739	1.067	
P12	-1495.836	-1974.000	10.02	7 # 11	3.12	2 # 11	24.00	0.074	#5@ 8.36	24.00	0.074	#5@ 8.36	72.00	0.20	0.542	1.203	
C 3	-2277.655	-3057.850	15.19	10 # 11	3.12	2 # 11	24.00	0.078	#5@ 7.93	24.00	0.060	#5@10.33	72.00	0.33	0.654	1.170	
P14	-1716.372	-2196.818	10.84	7 # 11	3.12	2 # 11	24.00	0.060	#5@10.33	24.00	0.060	#5@10.33	72.00	0.23	0.594	1.338	
P15	-26.929	-26.929	3.12	2 # 11	3.12	2 # 11	24.00	0.068	#5@ 9.14	0.00	0.000	#5@ 0.00	59.17	0.08	0.000	0.105	

NOTE: *** FS/FZ RATIO EXCEEDS 1.0! ***

COLUMN ANALYSIS AND DESIGN OUTPUT

CRITICAL COLUMN LOADS																							
CN	T	B	GR	LLC	WC	R	E	C	S	F	S	PF	MTF	MLF	PM	MTM	MLM	PU	MTU	MLU	PU/PM	B	D
1	T	1	LL	3	0.0							2049.9	-35.1	0.0	2049.9	1433.6	2195.0	7107.5	4973.8	7615.5	3.469	72.00	72.00
1	B	2		5.2								1905.2	377.4	3803.4	1905.2	1277.0	5613.9	3458.8	2314.4	10174.2	1.813	72.00	72.00
2	T	1	LL	13	0.0							2164.2	0.0	0.0	2164.2	1508.7	2412.1	6987.1	4873.3	7791.6	3.230	72.00	72.00
2	B	2		5.2								1955.5	475.3	3803.4	1955.5	1310.7	5695.3	3503.3	2343.8	10184.1	1.788	72.00	72.00
3	T	1	LL	8	0.0							2049.9	35.1	0.0	2049.9	1433.6	2195.0	7107.5	4973.8	7615.5	3.469	72.00	72.00
3	B	2		5.2	R							1905.2	-377.4	-3803.4	1905.2	1277.0	5613.9	3458.8	2314.4	10174.2	1.813	72.00	72.00

COLUMN DESIGN DATA																				
CN	T	B	FACE 1	B	FACE 2	D	FACE 3	D	FACE 4	AS	PS	BD12	BD	SUMPU	SUMPC	DEL.T	DEL.L	CM	R	PHIC
1	T	11	# 11	11	# 11	6	# 11	6	# 11	53.04	1.023	1.00	0.243	5861.	41267.	1.166	1.785	1.000	2	0.70
1	B	11	# 11	11	# 11	6	# 11	6	# 11	53.04	1.023	1.00	0.000	5015.	47830.	1.117	1.476	1.000	2	0.70
2	T	11	# 11	11	# 11	6	# 11	6	# 11	53.04	1.023	1.00	0.929	5861.	42073.	1.162	1.858	1.000	2	0.70
2	B	11	# 11	11	# 11	6	# 11	6	# 11	53.04	1.023	1.00	0.000	5015.	47830.	1.117	1.497	1.000	2	0.70
3	T	11	# 11	11	# 11	6	# 11	6	# 11	53.04	1.023	1.00	0.243	5861.	41267.	1.166	1.785	1.000	2	0.70
3	B	11	# 11	11	# 11	6	# 11	6	# 11	53.04	1.023	1.00	0.000	5015.	47830.	1.117	1.476	1.000	2	0.70

FOOTING 1 DESIGN LOADS																			
F	G	LLID	WC	ES	C	S	P	MT	VT	ML	VL	P4	P3	P2	P1	MTF	VBF	VPF	LOAD
2	2		4.2				1504.245	683.845	19.306	2763.753	37.670	247.955	79.002	123.122	292.075	115.135	22.480	39.464	MAX.P1
2	2		3.2				1955.518	1108.910	31.307	3243.756	44.459	304.604	106.251	177.795	376.148	153.856	30.031	51.304	MAX.MT
2	2		3.2				1955.518	1108.910	31.307	3243.756	44.459	304.604	106.251	177.795	376.148	153.856	30.031	51.304	MAX.VT
2	2		5.2				1955.518	475.312	13.419	3803.446	51.693	342.105	109.629	140.295	372.771	141.811	27.704	51.304	MAX.VP
2	2		5.2				1955.518	475.312	13.419	3803.446	51.693	342.105	109.629	140.295	372.771	201.273	39.191	51.304	MAX.ML
2	2		5.2				1955.518	475.312	13.419	3803.446	51.693	342.105	109.629	140.295	372.771	201.273	39.191	51.304	MAX.VL
3	5		5.2	S			1390.889	980.815	26.604	2925.728	39.764	230.843	52.015	115.043	293.871	113.284	22.122	36.575	MAX.P3

FOOTING 1 ANALYSIS/DESIGN RESULTS

FOOTING SIZE				* BAR REINFORCEMENT STEEL				* SECTION CAPACITIES				
B	D	T	P1/PA	AS	NO.SIZE	SPAC.	PLACEMENT	MT.	VB	VP	DS	FC
14.000	14.000	4.000	0.994	1.13	21 # 8	@ 8.000	TOP TRAN	161.224	37.691	75.382	31.230	0.000
				1.44	16 #10	@10.500	BOT.LONG	203.423	39.061	78.121	32.365	0.000

NUMBER OF PILES = 9 BP = 5.750 DP = 5.750

FOOTING 2 DESIGN SAME AS FOOTING 1

FOOTING 3 DESIGN SAME AS FOOTING 1