

30-OCT-09
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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
66' CURB-CURB; 9 BEAMS; 139' SPAN; 50' TALL; BRIDGE 19 ; PIER 12

PROB. NO. 0001

DESIGN NO.	NO. CAN	NO. COL	NO. LLC	SKEW D	ANG M	F'C PSI	FC PSI	N	FY PSI	FS PSI	DESIGN DATA		CONC.	Z	* * * CAP			REINFORCING STEEL			* * * CAP			
OPTIONS											EC KSI	ES KSI	STRAIN	FACT	MAIN SIZE	STR SIZ	MAX TOP	MAX BOT	MIN SIZE	MIN NO.	MIN CL.	MIN S.SP	MIN INCR.	MIN BOT CL.
D D D L	2	3	23	10-00-00		3500.	1400.	8.	60000.	24000.	3409.	29000.	0.0030	170.	11	5	13	13	11	2	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
MIN.P	MAX.P	CL.SP.	CLEAR	MODE	COEF					%	KCF	KSF	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	18.87	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	11.170	2.500	4.000	5.000	5.000	2.000	8.670	7.488	5.488						
12	C	23.910	2.500	6.000	5.000		0.000	0.000	2.000	6.162	7.825	5.923				
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		50.000	0.000	5.000	5.000	5.000	5.000	4.000	0.000	5	5	11	5	5	11	13	13	13	13	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	7.000	7.000	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

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						
1350.	2701.	1	50	0	44	6	41	12	33	16	17	19	7.375	7.375	5.396	41.436

GROUP III WIND

STD. * WIND ON SUPERSTRUCTURE	INTENSITIES	* STD. * WIND ON LIVE LOAD	INTENSITIES	* LENGTHS OF LL	* WIND ON LL	LL ARMS																			
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	138.5	277.0	15.583	15.583

MISCELLANEOUS FORCES

CENTRI.	TRACTION	FORCE	AND ARMS	EXPANSION	SHRINKAGE	STREAM	FLOW
FT	FL	APT	APL	COEFFICIENT	COEFFICIENT	PT	PL
0.000	9.764	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	265.190 305.495	0.000 0.000	305.495 265.190	0.000	305.495	305.495	0.000	305.495	0.000	305.495	305.495	0.000
LL 1	1	83.320 0.000	0.000 0.000	53.101 0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL 2	2	83.320 0.000	0.000 0.000	101.015 0.000	0.000	83.311	5.195	0.000	0.000	0.000	0.000	0.000	0.000
LL 3	3	83.320 0.000	0.000 0.000	101.015 0.000	0.000	110.920	88.507	0.000	25.501	0.000	0.000	0.000	0.000
LL 4	4	83.320 0.000	0.000 0.000	101.015 0.000	0.000	110.920	95.810	0.000	108.813	0.000	45.807	0.000	0.000
LL 5	5	83.320 0.000	0.000 0.000	101.015 0.000	0.000	110.920	95.810	0.000	108.813	0.000	103.113	79.116	0.000
LL 6	1	0.000 53.101	0.000 0.000	0.000 83.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL 7	2	0.000 101.015	0.000 0.000	0.000 83.320	0.000	0.000	0.000	0.000	0.000	0.000	5.195	83.311	0.000
LL 8	3	0.000 101.015	0.000 0.000	0.000 83.320	0.000	0.000	0.000	0.000	25.501	0.000	88.507	110.920	0.000
LL 9	4	0.000 101.015	0.000 0.000	0.000 83.320	0.000	0.000	45.807	0.000	108.813	0.000	95.810	110.920	0.000
LL10	5	0.000 101.015	0.000 0.000	0.000 83.320	0.000	79.116	103.113	0.000	108.813	0.000	95.810	110.920	0.000
LL11	1	0.000 0.000	0.000 0.000	0.000 0.000	0.000	0.000	26.555	0.000	83.311	0.000	26.555	0.000	0.000

PIER-66-9-139-50.OUT

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	46.860	109.866	0.000	89.561	0.000	26.555	0.000	0.000
LL13	3	0.000 0.000	0.000 0.000	0.000 0.000	0.000	46.860	109.866	0.000	95.810	0.000	109.866	46.860	0.000
LL14	4	0.000 0.000	0.000 0.000	81.222 0.000	0.000	102.059	109.866	0.000	95.810	0.000	109.866	46.860	0.000
LL15	5	0.000 81.222	0.000 0.000	81.222 0.000	0.000	102.059	109.866	0.000	95.810	0.000	109.866	102.059	0.000
LL16	2	0.000 0.000	0.000 0.000	0.000 0.000	0.000	2.602	83.311	0.000	101.015	0.000	83.311	2.602	0.000
LL17	3	0.000 0.000	0.000 0.000	22.908 0.000	0.000	85.914	113.513	0.000	101.015	0.000	83.311	2.602	0.000
LL18	4	0.000 22.908	0.000 0.000	22.908 0.000	0.000	85.914	113.513	0.000	101.015	0.000	113.513	85.914	0.000
LL19	5	43.213 22.908	0.000 0.000	106.220 0.000	0.000	95.810	113.513	0.000	101.015	0.000	113.513	85.914	0.000
LL20	2	83.320 53.101	0.000 0.000	53.101 83.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LL21	3	83.320 53.101	0.000 0.000	101.015 83.320	0.000	83.311	5.195	0.000	0.000	0.000	0.000	0.000	0.000
LL22	4	83.320 101.015	0.000 0.000	101.015 83.320	0.000	83.311	5.195	0.000	0.000	0.000	5.195	83.311	0.000
LL23	5	83.320 101.015	0.000 0.000	101.015 83.320	0.000	110.920	88.507	0.000	25.501	0.000	5.195	83.311	0.000

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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	0.501	7.451	0.317	8.408	0.501	0.000	-7.451	1.333	0.333	16.667	16.667	
	2	0.000	9.066	0.366	9.215	0.000	-4.533	-4.533	1.333	0.333	16.667	16.667	
	3	-0.501	7.451	0.317	8.408	-0.501	-7.451	0.000	1.333	0.333	16.667	16.667	
EXPANSION OF CAP	1	12.977	206.848	8.846	235.469	12.977	0.000	-206.848	0.000	0.000	0.000	0.000	
	2	-25.953	0.000	0.000	0.000	-25.953	-103.424	103.424	0.000	0.000	0.000	0.000	
	3	12.977	-206.848	-8.846	-235.469	12.977	206.848	0.000	0.000	0.000	0.000	0.000	
SHRINKAGE OF CAP	1	-31.721	-505.627	-21.624	-575.590	-31.721	0.000	505.627	0.000	0.000	0.000	0.000	
	2	63.441	0.000	0.000	0.000	63.441	252.814	-252.814	0.000	0.000	0.000	0.000	
	3	-31.721	505.627	21.624	575.590	-31.721	-505.627	0.000	0.000	0.000	0.000	0.000	
DEAD LOAD TOTAL	1	988.337 1160.837	-82.432	-2.473	-41.216	1160.837	2212.632	-2130.200	0.000	0.000	0.000	0.000	
	2	994.885 1167.385	0.000	0.000	0.000	1167.385	1708.163	-1708.163	0.000	0.000	0.000	0.000	
	3	988.337 1160.837	82.432	2.473	41.216	1160.837	2130.200	-2212.632	0.000	0.000	0.000	0.000	
TRAC. FORCE 1 LN	1	1.402	12.634	0.538	14.255	1.402	0.000	-12.634	-62.768	-3.205	-210.208	-210.208	
	2	0.000	15.372	0.620	15.625	0.000	-7.686	-7.686	-62.768	-3.205	-210.208	-210.208	
	3	-1.402	12.634	0.538	14.255	-1.402	-12.634	0.000	-62.768	-3.205	-210.208	-210.208	
WIND ON SUBSTR.	1	2.705	40.207	1.712	45.369	2.705	0.000	-40.207	-55.248	-13.812	-690.600	-690.600	
	2	0.000	48.922	1.973	49.726	0.000	-24.461	-24.461	-55.248	-13.812	-690.600	-690.600	
	3	-2.705	40.207	1.712	45.369	-2.705	-40.207	0.000	-55.248	-13.812	-690.600	-690.600	
GROUP 2 WIND 1 1	1	46.276	535.529	22.796	604.275	46.276	0.000	-535.529	-10.805	-9.905	-466.431	-466.431	
	2	0.000	651.606	26.278	662.313	0.000	-325.803	-325.803	-10.805	-9.905	-466.431	-466.431	
	3	-46.276	535.529	22.796	604.275	-46.276	-535.529	0.000	-10.805	-9.905	-466.431	-466.431	
GROUP 2 WIND 1 2	1	46.276	535.529	22.796	604.275	46.276	0.000	-535.529	99.691	17.719	914.769	914.769	
	2	0.000	651.606	26.278	662.313	0.000	-325.803	-325.803	99.691	17.719	914.769	914.769	
	3	-46.276	535.529	22.796	604.275	-46.276	-535.529	0.000	99.691	17.719	914.769	914.769	
GROUP 2 WIND 2 1	1	42.892	497.059	21.159	560.867	42.892	0.000	-497.059	-76.652	-15.694	-798.562	-798.562	
	2	0.000	604.798	24.391	614.736	0.000	-302.399	-302.399	-76.652	-15.694	-798.562	-798.562	
	3	-42.892	497.059	21.159	560.867	-42.892	-497.059	0.000	-76.652	-15.694	-798.562	-798.562	
GROUP 2 WIND 2 2	1	39.203	455.121	19.373	513.545	39.203	0.000	-455.121	154.872	22.570	1193.100	1193.100	
	2	0.000	553.770	22.333	562.870	0.000	-276.885	-276.885	154.872	22.570	1193.100	1193.100	
	3	-39.203	455.121	19.373	513.545	-39.203	-455.121	0.000	154.872	22.570	1193.100	1193.100	
GROUP 2 WIND 3 1	1	42.122	488.309	20.786	550.993	42.122	0.000	-488.309	-139.833	-21.248	-1117.244	-1117.244	
	2	0.000	594.151	23.961	603.914	0.000	-297.076	-297.076	-139.833	-21.248	-1117.244	-1117.244	
	3	-42.122	488.309	20.786	550.993	-42.122	-488.309	0.000	-139.833	-21.248	-1117.244	-1117.244	
GROUP 2 WIND 3 2	1	34.744	404.433	17.216	456.350	34.744	0.000	-404.433	212.720	27.656	1484.881	1484.881	
	2	0.000	492.095	19.846	500.181	0.000	-246.047	-246.047	212.720	27.656	1484.881	1484.881	
	3	-34.744	404.433	17.216	456.350	-34.744	-404.433	0.000	212.720	27.656	1484.881	1484.881	

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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	36.380	423.037	18.008	477.342	36.380	0.000	-423.037	-187.287	-25.420	-1356.598	-1356.598	
	2	0.000	514.731	20.758	523.189	0.000	-257.366	-257.366	-187.287	-25.420	-1356.598	-1356.598	
	3	-36.380	423.037	18.008	477.342	-36.380	-423.037	0.000	-187.287	-25.420	-1356.598	-1356.598	
GROUP 2 WIND 4 2	1	26.543	311.202	13.247	351.151	26.543	0.000	-311.202	245.952	30.577	1652.501	1652.501	
	2	0.000	378.656	15.271	384.878	0.000	-189.328	-189.328	245.952	30.577	1652.501	1652.501	

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	3	-26.543	311.202	13.247	351.151	-26.543	-311.202	0.000	245.952	30.577	1652.501	1652.501	
GROUP 2 WIND 5 1	1	23.360	275.018	11.707	310.323	23.360	0.000	-275.018	-231.766	-29.330	-1580.948	-1580.948	
	2	0.000	334.629	13.495	340.128	0.000	-167.315	-167.315	-231.766	-29.330	-1580.948	-1580.948	
	3	-23.360	275.018	11.707	310.323	-23.360	-275.018	0.000	-231.766	-29.330	-1580.948	-1580.948	
GROUP 2 WIND 5 2	1	11.678	142.215	6.054	160.471	11.678	0.000	-142.215	261.987	31.987	1733.383	1733.383	
	2	0.000	173.040	6.978	175.884	0.000	-86.520	-86.520	261.987	31.987	1733.383	1733.383	
	3	-11.678	142.215	6.054	160.471	-11.678	-142.215	0.000	261.987	31.987	1733.383	1733.383	
GROUP 3 WIND 1 1	1	25.164	262.291	11.165	295.962	25.164	0.000	-262.291	12.458	-2.170	-87.353	-87.353	
	2	0.000	319.143	12.871	324.388	0.000	-159.572	-159.572	12.458	-2.170	-87.353	-87.353	
	3	-25.164	262.291	11.165	295.962	-25.164	-262.291	0.000	12.458	-2.170	-87.353	-87.353	
GROUP 3 WIND 1 2	1	25.164	262.291	11.165	295.962	25.164	0.000	-262.291	45.607	6.117	327.007	327.007	
	2	0.000	319.143	12.871	324.388	0.000	-159.572	-159.572	45.607	6.117	327.007	327.007	
	3	-25.164	262.291	11.165	295.962	-25.164	-262.291	0.000	45.607	6.117	327.007	327.007	
GROUP 3 WIND 2 1	1	23.273	242.855	10.338	274.031	23.273	0.000	-242.855	-30.549	-5.094	-264.864	-264.864	
	2	0.000	295.495	11.917	300.351	0.000	-147.747	-147.747	-30.549	-5.094	-264.864	-264.864	
	3	-23.273	242.855	10.338	274.031	-23.273	-242.855	0.000	-30.549	-5.094	-264.864	-264.864	
GROUP 3 WIND 2 2	1	21.211	221.672	9.436	250.128	21.211	0.000	-221.672	81.645	8.568	475.759	475.759	
	2	0.000	269.720	10.877	274.152	0.000	-134.860	-134.860	81.645	8.568	475.759	475.759	
	3	-21.211	221.672	9.436	250.128	-21.211	-221.672	0.000	81.645	8.568	475.759	475.759	
GROUP 3 WIND 3 1	1	22.842	238.433	10.149	269.041	22.842	0.000	-238.433	-71.813	-7.899	-435.185	-435.185	
	2	0.000	290.114	11.700	294.882	0.000	-145.057	-145.057	-71.813	-7.899	-435.185	-435.185	
	3	-22.842	238.433	10.149	269.041	-22.842	-238.433	0.000	-71.813	-7.899	-435.185	-435.185	
GROUP 3 WIND 3 2	1	18.719	196.067	8.346	221.236	18.719	0.000	-196.067	119.426	11.136	631.701	631.701	
	2	0.000	238.565	9.621	242.485	0.000	-119.282	-119.282	119.426	11.136	631.701	631.701	
	3	-18.719	196.067	8.346	221.236	-18.719	-196.067	0.000	119.426	11.136	631.701	631.701	
GROUP 3 WIND 4 1	1	19.633	205.458	8.746	231.832	19.633	0.000	-205.458	-102.807	-10.007	-563.111	-563.111	
	2	0.000	249.991	10.882	254.099	0.000	-124.996	-124.996	-102.807	-10.007	-563.111	-563.111	
	3	-19.633	205.458	8.746	231.832	-19.633	-205.458	0.000	-102.807	-10.007	-563.111	-563.111	
GROUP 3 WIND 4 2	1	14.135	148.969	6.341	168.092	14.135	0.000	-148.969	141.129	12.612	721.283	721.283	
	2	0.000	181.258	7.310	184.237	0.000	-90.629	-90.629	141.129	12.612	721.283	721.283	
	3	-14.135	148.969	6.341	168.092	-14.135	-148.969	0.000	141.129	12.612	721.283	721.283	
GROUP 3 WIND 5 1	1	12.355	130.680	5.563	147.456	12.355	0.000	-130.680	-131.858	-11.982	-683.021	-683.021	
	2	0.000	159.006	6.412	161.618	0.000	-79.503	-79.503	-131.858	-11.982	-683.021	-683.021	
	3	-12.355	130.680	5.563	147.456	-12.355	-130.680	0.000	-131.858	-11.982	-683.021	-683.021	

□ 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	5.827	63.600	2.707	71.764	5.827	0.000	-63.600	151.600	13.324	764.504	764.504	
	2	0.000	77.385	3.121	78.657	0.000	-38.693	-38.693	151.600	13.324	764.504	764.504	
	3	-5.827	63.600	2.707	71.764	-5.827	-63.600	0.000	151.600	13.324	764.504	764.504	
LIVE LOAD LL 1	1	164.047	-120.787	-3.266	-42.490	164.047	623.900	-503.113	0.000	0.000	0.000	0.000	
	2	-30.657	70.536	2.474	53.171	-30.657	-157.435	86.899	0.000	0.000	0.000	0.000	
	3	3.030	14.445	0.791	25.126	3.030	-14.445	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 2	1	264.194	-50.848	-1.327	-15.482	264.194	623.900	-573.052	0.000	0.000	0.000	0.000	
	2	10.644	12.493	0.574	16.189	10.644	16.775	-29.268	0.000	0.000	0.000	0.000	
	3	-1.997	18.470	0.753	19.177	-1.997	-18.470	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 3	1	271.881	16.856	0.586	12.466	271.881	561.510	-578.366	0.000	0.000	0.000	0.000	
	2	105.769	-56.574	-1.616	-24.249	105.769	247.603	-191.029	0.000	0.000	0.000	0.000	
	3	-9.313	31.642	1.030	19.859	-9.313	-31.642	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 4	1	225.135	10.696	0.408	9.710	225.135	467.925	-478.621	0.000	0.000	0.000	0.000	
	2	183.670	-27.282	-0.731	-9.279	183.670	280.642	-253.360	0.000	0.000	0.000	0.000	
	3	0.459	7.862	0.323	8.293	0.459	-7.862	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 5	1	218.336	0.437	0.241	11.608	218.336	467.925	-468.363	0.000	0.000	0.000	0.000	
	2	245.673	41.074	1.460	31.926	245.673	432.941	-474.014	0.000	0.000	0.000	0.000	
	3	47.572	-64.289	-1.701	-20.756	47.572	64.289	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL 6	1	3.030	-14.445	-0.791	-25.126	3.030	0.000	14.445	0.000	0.000	0.000	0.000	
	2	-30.657	70.536	-2.474	-53.171	-30.657	-86.899	157.435	0.000	0.000	0.000	0.000	
	3	164.047	120.787	3.266	42.490	164.047	503.113	-623.900	0.000	0.000	0.000	0.000	
LIVE LOAD LL 7	1	-1.997	-18.470	-0.753	-19.177	-1.997	0.000	18.470	0.000	0.000	0.000	0.000	
	2	10.644	-12.493	-0.574	-16.189	10.644	29.268	-16.775	0.000	0.000	0.000	0.000	
	3	264.194	50.848	1.327	15.482	264.194	573.052	-623.900	0.000	0.000	0.000	0.000	
LIVE LOAD LL 8	1	-9.313	-31.642	-1.030	-19.859	-9.313	0.000	31.642	0.000	0.000	0.000	0.000	
	2	105.769	56.574	1.616	24.249	105.769	191.029	-247.603	0.000	0.000	0.000	0.000	
	3	271.881	-16.856	-0.586	-12.466	271.881	578.366	-561.510	0.000	0.000	0.000	0.000	
LIVE LOAD LL 9	1	0.459	-7.862	-0.323	-8.293	0.459	0.000	7.862	0.000	0.000	0.000	0.000	
	2	183.670	27.282	0.731	9.279	183.670	253.360	-280.642	0.000	0.000	0.000	0.000	
	3	225.135	-10.696	-0.408	-9.710	225.135	478.621	-467.925	0.000	0.000	0.000	0.000	
LIVE LOAD LL10	1	47.572	64.289	1.701	20.756	47.572	0.000	-64.289	0.000	0.000	0.000	0.000	
	2	245.673	-41.074	-1.460	-31.926	245.673	474.014	-432.941	0.000	0.000	0.000	0.000	
	3	218.336	-0.437	-0.241	-11.608	218.336	468.363	-467.925	0.000	0.000	0.000	0.000	
LIVE LOAD LL11	1	4.525	10.104	0.303	5.052	4.525	0.000	-10.104	0.000	0.000	0.000	0.000	
	2	127.372	0.000	0.000	0.000	127.372	112.317	-112.317	0.000	0.000	0.000	0.000	
	3	4.525	-10.104	-0.303	-5.052	4.525	10.104	0.000	0.000	0.000	0.000	0.000	
LIVE LOAD LL12	1	54.187	95.159	2.710	40.325	54.187	0.000	-95.159	0.000	0.000	0.000	0.000	
	2	223.544	-87.938	-2.783	-51.224	223.544	407.957	-320.019	0.000	0.000	0.000	0.000	
	3	-4.890	7.288	0.074	-3.610	-4.890	-7.288	0.000	0.000	0.000	0.000	0.000	

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

TRANSVERSE

*

LONGITUDINAL

LOAD	COL	PIER-66-9-139-50.OUT										
		PC	MT	V	MB	RF	ML	MR	MT	V	MB	MF
LIVE LOAD LL13	1	40.296	69.990	2.100	34.995	40.296	0.000	-69.990	0.000	0.000	0.000	0.000
	2	287.744	0.000	0.000	0.000	287.744	554.093	-554.093	0.000	0.000	0.000	0.000
	3	40.296	-69.990	-2.100	-34.995	40.296	69.990	0.000	0.000	0.000	0.000	0.000
LIVE LOAD LL14	1	119.800	91.611	2.671	41.939	119.800	0.000	-91.611	0.000	0.000	0.000	0.000
	2	258.168	-27.067	-0.889	-17.400	258.168	541.966	-514.899	0.000	0.000	0.000	0.000
	3	31.293	-56.811	-1.782	-32.272	31.293	56.811	0.000	0.000	0.000	0.000	0.000
LIVE LOAD LL15	1	117.514	90.097	2.703	45.049	117.514	0.000	-90.097	0.000	0.000	0.000	0.000
	2	276.550	0.000	0.000	0.000	276.550	595.121	-595.121	0.000	0.000	0.000	0.000
	3	117.514	-90.097	-2.703	-45.049	117.514	90.097	0.000	0.000	0.000	0.000	0.000
LIVE LOAD LL16	1	15.642	33.697	1.011	16.848	15.642	0.000	-33.697	0.000	0.000	0.000	0.000
	2	241.558	0.000	0.000	0.000	241.558	360.755	-360.755	0.000	0.000	0.000	0.000
	3	15.642	-33.697	-1.011	-16.848	15.642	33.697	0.000	0.000	0.000	0.000	0.000
LIVE LOAD LL17	1	87.383	106.072	3.023	45.094	87.383	0.000	-106.072	0.000	0.000	0.000	0.000
	2	273.245	-67.719	-2.190	-41.802	273.245	536.807	-469.088	0.000	0.000	0.000	0.000
	3	7.709	-22.469	-0.833	-19.177	7.709	22.469	0.000	0.000	0.000	0.000	0.000
LIVE LOAD LL18	1	67.512	81.845	2.455	40.922	67.512	0.000	-81.845	0.000	0.000	0.000	0.000
	2	274.239	0.000	0.000	0.000	274.239	567.679	-567.679	0.000	0.000	0.000	0.000
	3	67.512	-81.845	-2.455	-40.922	67.512	81.845	0.000	0.000	0.000	0.000	0.000
LIVE LOAD LL19	1	177.689	40.829	1.350	26.685	177.689	242.684	-283.513	0.000	0.000	0.000	0.000
	2	265.610	22.584	0.803	17.563	265.610	520.822	-543.407	0.000	0.000	0.000	0.000
	3	68.281	-75.955	-2.153	-31.707	68.281	75.955	0.000	0.000	0.000	0.000	0.000
LIVE LOAD LL20	1	167.078	-135.232	-4.057	-67.616	167.078	623.900	-488.668	0.000	0.000	0.000	0.000
	2	-61.313	0.000	0.000	0.000	-61.313	-244.334	244.334	0.000	0.000	0.000	0.000
	3	167.078	135.232	4.057	67.616	167.078	488.668	-623.900	0.000	0.000	0.000	0.000
LIVE LOAD LL21	1	240.501	-58.764	-1.906	-36.547	240.501	561.510	-502.747	0.000	0.000	0.000	0.000
	2	-18.011	-52.238	-1.710	-33.284	-18.011	-63.112	115.350	0.000	0.000	0.000	0.000
	3	145.846	125.331	3.617	55.501	145.846	436.179	-561.510	0.000	0.000	0.000	0.000
LIVE LOAD LL22	1	196.648	-51.988	-1.560	-25.994	196.648	467.925	-415.937	0.000	0.000	0.000	0.000
	2	15.966	0.000	0.000	0.000	15.966	34.532	-34.532	0.000	0.000	0.000	0.000
	3	196.648	51.988	1.560	25.994	196.648	415.937	-467.925	0.000	0.000	0.000	0.000
LIVE LOAD LL23	1	225.070	0.194	-0.076	-3.995	225.070	467.925	-468.120	0.000	0.000	0.000	0.000
	2	96.123	-56.515	-1.777	-32.350	96.123	228.287	-171.772	0.000	0.000	0.000	0.000
	3	190.384	64.505	1.853	28.160	190.384	403.420	-467.925	0.000	0.000	0.000	0.000

CAP ANALYSIS AND DESIGN DATA

CAP MOMENTS AND SHEARS

POINT	MOMENTS (KIP- FEET)								SHEARS (KIPS)							
	D.L. TOT.	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	-28.308	-28.308	-28.308	-28.308	-28.308	-28.308	-28.308	-15.884	-360.631	-15.884	-360.631	-15.884	-541.519			
P 2	-2084.845	-2084.845	-3077.557	-2084.845	-2084.845	-2084.845	-2679.283	-389.938	-389.938	-389.938	-389.938	-570.826	-570.826			
C 1L	-2876.422	-2876.422	-4230.909	-2876.422	-2876.422	-2876.422	-3687.492	-401.638		-401.638		-582.526				
C 1R	-2769.260	-2700.563	-4024.893	-2073.073	-3465.447	-2342.802	-3906.458		486.057		716.138		465.839			
P 4	-1808.846	-1741.861	-2781.150	-1206.321	-2411.371	-1420.327	-2700.383	474.357	474.357	704.438	704.438	454.139	454.139			
P 5	1003.078	1955.865	400.352	1317.030	689.126	1747.374	480.991	438.309	41.166	668.391	107.721	418.091	-2.139			
P 6	1146.100	2024.173	891.566	1198.601	1093.599	1700.083	964.626	-4.611	-401.754	61.945	-335.198	-47.915	-646.466			
P 7	-1336.104	-938.766	-2183.724	-1006.222	-1665.986	-921.043	-2034.414	-436.404	-436.404	-369.848	-369.848	-681.116	-681.116			
C 2L	-2220.612	-1690.162	-3512.619	-1797.068	-2644.155	-1675.550	-3239.181	-448.104		-381.548		-692.816				
C 2R	-2220.612	-1690.162	-3512.619	-1797.068	-2644.155	-1675.550	-3239.181		448.104		670.297		381.548			
P 9	-1336.104	-938.766	-2183.725	-1006.222	-1665.986	-921.043	-2034.414	436.404	436.404	658.597	658.597	369.848	369.848			
P10	1146.100	1872.897	891.566	1198.601	1093.599	1610.366	964.626	401.754	4.611	623.948	47.915	335.198	-61.945			
P11	1003.078	1810.368	400.352	1317.030	689.126	1668.027	480.991	-41.166	-438.309	2.139	-418.091	-107.721	-668.391			
P12	-1808.846	-1741.861	-2781.150	-1206.321	-2411.371	-1420.327	-2700.382	-474.357	-474.357	-454.139	-454.139	-704.438	-704.438			
C 3L	-2769.260	-2700.563	-4024.893	-2073.073	-3465.447	-2342.802	-3906.458	-486.057		-465.839		-716.138				
C 3R	-2876.422	-2876.422	-4230.909	-2876.422	-2876.422	-2876.422	-3687.492		401.638		582.526		401.638			
P14	-2084.845	-2084.845	-3077.557	-2084.845	-2084.845	-2084.845	-2679.283	389.938	389.938	570.826	570.826	389.938	389.938			
P15	-28.308	-28.307	-28.308	-28.308	-28.308	-28.307	-28.308	360.631	15.884	541.519	15.884	360.631	15.884			

PT.	MOMENTS (KIP- FEET)		CAP DESIGN DATA				LEFT STIRRUPS		RIGHT STIRRUPS		D IN.	FC PSI	PS %	FS/FF RATIO	FS/FZ RATIO
	M+ UNF. K-FT.	M- UNF. K-FT.	TOP REINFORCE. AS NO. SIZE	BOT. REINFORCE. AS NO. SIZE	M.SP. AV/IN	BAR&SPAC	M.SP. AV/IN	BAR&SPAC							
P 1	-21.775	-21.775	3.12 2 # 11	3.12 2 # 11	0.00	0.000 #5@ 0.00	24.00	0.075 #5@ 8.24	58.19			0.10	0.000	0.082	
P 2	-1603.727	-2060.987	10.22 7 # 11	3.12 2 # 11	24.00	0.050 #5@12.40	24.00	0.050 #5@12.40	72.00			0.27	0.545	1.187	
C 1	-2098.557	-2836.532	14.16 10 # 11	3.12 2 # 11	24.00	0.050 #5@12.40	24.00	0.086 #5@ 7.20	72.00			0.38	0.594	1.027	
P 4	-1360.566	-1839.280	9.21 6 # 11	3.12 2 # 11	24.00	0.083 #5@ 7.49	24.00	0.083 #5@ 7.49	72.00			0.23	0.656	1.296	
P 5	1210.469	493.973	3.12 2 # 11	7.58 5 # 11	24.00	0.073 #5@ 8.55	0.00	0.000 #5@ 0.00	72.00			0.18	0.868	1.082	

PIER-66-9-139-50.OUT														
P 6	1286.071	764.372	3.12	2 # 11	7.58	5 # 11	0.00	0.000 #5@ 0.00	24.00	0.066 #5@ 9.36	72.00	0.18	0.709	1.150
P 7	-844.752	-1418.201	7.58	5 # 11	3.12	2 # 11	24.00	0.076 #5@ 8.14	24.00	0.076 #5@ 8.14	72.00	0.18	0.809	1.268
C 2	-1463.829	-2303.284	11.70	8 # 11	3.12	2 # 11	24.00	0.080 #5@ 7.80	24.00	0.073 #5@ 8.48	72.00	0.31	0.780	1.115
P 9	-844.752	-1418.201	7.58	5 # 11	3.12	2 # 11	24.00	0.070 #5@ 8.89	24.00	0.070 #5@ 8.89	72.00	0.18	0.809	1.268
P10	1216.391	764.373	3.12	2 # 11	7.58	5 # 11	24.00	0.060 #5@10.36	0.00	0.000 #5@ 0.00	72.00	0.18	0.615	1.088
P11	1143.450	493.973	3.12	2 # 11	7.58	5 # 11	0.00	0.000 #5@ 0.00	24.00	0.073 #5@ 8.55	72.00	0.18	0.787	1.022
P12	-1360.565	-1839.280	9.21	6 # 11	3.12	2 # 11	24.00	0.083 #5@ 7.49	24.00	0.083 #5@ 7.49	72.00	0.23	0.656	1.296
C 3	-2098.557	-2836.532	14.16	10 # 11	3.12	2 # 11	24.00	0.086 #5@ 7.20	24.00	0.050 #5@12.40	72.00	0.38	0.594	1.027
P14	-1603.727	-2060.987	10.22	7 # 11	3.12	2 # 11	24.00	0.050 #5@12.40	24.00	0.050 #5@12.40	72.00	0.27	0.545	1.187
P15	-21.775	-21.775	3.12	2 # 11	3.12	2 # 11	24.00	0.075 #5@ 8.24	0.00	0.000 #5@ 0.00	58.19	0.10	0.000	0.082

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	PF	MTF	MLF	PM	MTM	MLM	PU	MTU	MLU	PU/PM	B	D
1	T	1	LL	3	0.0						1875.1	-70.6	0.0	1875.1	1075.1	1551.5	5115.3	2935.9	4236.7	2.729	60.00	60.00
1	B	3	LL23	5.2	R						1800.9	-82.6-2018.6	1800.9	1036.1	3041.4	3415.4	1961.6	5758.1	1.894	60.00	60.00	
2	T	1	LL13	0.0							1918.0	0.0	0.0	1918.0	1061.7	1609.8	5126.3	2840.4	4306.9	2.674	60.00	60.00
2	B	3	LL15	5.2							1877.1	26.1	2018.6	1877.1	1043.2	3112.6	3483.2	1931.4	5763.0	1.853	60.00	60.00
3	T	1	LL	8	0.0						1875.1	70.6	0.0	1875.1	1075.1	1551.5	5115.3	2935.9	4236.7	2.729	60.00	60.00
3	B	3	LL10	5.2	R						1793.7	14.7-2018.6	1793.7	1025.7	3034.8	3414.5	1949.1	5767.0	1.901	60.00	60.00	

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	7	# 11	7	# 11	5	# 11	5	# 11	37.44	1.040	1.00	0.577	4999.	39064.	1.147	1.655	1.000	2	0.70
1	B	7	# 11	7	# 11	5	# 11	5	# 11	37.44	1.040	1.00	0.743	4864.	37152.	1.151	1.507	1.000	2	0.70
2	T	7	# 11	7	# 11	5	# 11	5	# 11	37.44	1.040	1.00	0.000	4999.	51707.	1.107	1.679	1.000	2	0.70
2	B	7	# 11	7	# 11	5	# 11	5	# 11	37.44	1.040	1.00	0.000	4864.	48513.	1.111	1.542	1.000	2	0.70
3	T	7	# 11	7	# 11	5	# 11	5	# 11	37.44	1.040	1.00	0.577	4999.	39064.	1.147	1.655	1.000	2	0.70
3	B	7	# 11	7	# 11	5	# 11	5	# 11	37.44	1.040	1.00	0.536	4864.	38724.	1.144	1.503	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	3	LL15	4.2				1400.034	125.644	4.985	1509.563	24.632	271.377	130.077	148.990	290.289	52.449	-0.418	33.185	MAX.P1
2	3	LL15	4.2				1820.045	163.338	6.481	1962.432	32.021	352.790	169.101	193.688	377.376	68.184	-0.544	43.140	MAX.MT
2	2		5.2				1517.601	228.649	9.072	2253.397	41.583	318.981	106.666	141.084	353.399	58.611	-0.544	36.020	MAX.VT
2	3	LL15	5.2				1820.045	26.084	1.035	2018.619	32.947	365.751	176.800	180.726	369.677	65.601	-0.544	43.140	MAX.VP
2	3	LL15	5.2				1820.045	26.084	1.035	2018.619	32.947	365.751	176.800	180.726	369.677	134.694	-0.544	43.140	MAX.ML
2	2		5.2				1517.601	228.649	9.072	2253.397	41.583	318.981	106.666	141.084	353.399	122.872	-0.544	36.020	MAX.VL
2	2		4.2				1167.385	384.878	15.271	1652.501	30.577	225.842	70.119	128.054	283.776	49.018	-0.418	27.708	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	
10.000	10.000	3.250	0.988	0.69	23 # 5 @	5.125	TOP TRAN	70.004	27.055	54.110	22.417	0.000	
				1.35	11 #10 @	10.875	BOT.LONG	139.504	28.199	56.398	23.365	0.000	

NUMBER OF PILES = 7 BP = 3.750 DP = 3.750

FOOTING 2 DESIGN SAME AS FOOTING 1

FOOTING 3 DESIGN SAME AS FOOTING 1