PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 4TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 231.1 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 231.1 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	-175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 4TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 3.467 ft-kips
With Force Acting Along 'X' Axis = 3.467 ft-kips

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 4TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7, '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	33.3	7.0	7.0	40.2	1.47
4	5.676	-135.34	-768.12	103.956	33.3	7.6	7.6	40.8	1.49
7	4.593	16.16	74.23	1.200	26.9	0.7	0.7	27.6	1.18
9	10.793	6.83	73.74	504	63.3	0.7	0.7	64.0	1.39
13	5.676	116.16	659.29	76.585	33.3	6.5	6.5	39.7	1.45
15	5.676	105.33	597.82	62.970	33.3	5.9	5.9	39.1	1.43
17	0.688	110.41	76.02	8.393	4.0	0.7	0.7	4.8	0.50
18	0.329	110.41	36.37	4.016	1.9	0.4	0.4	2.3	0.33
19	0.329	-129.59	-42.69	5.532	1.9	0.4	0.4	2.4	0.34

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	7.1	.0	.0	7.1	1.38
3	0.341	-24.57	-8.37	206	13.1	0.1	0.1	13.1	2.02
5	0.773	-6.82	-5.27	36	29.6	0.1	0.1	29.7	2.97
6	0.412	26.10	10.75	281	15.8	0.1	0.1	15.9	2.27
8	0.966	-19.07	-18.42	351	37.0	0.2	0.2	37.2	3.72
10	0.773	16.35	12.64	207	29.6	0.1	0.1	29.7	2.97
11	0.773	-1.32	-1.02	1	29.6	.0	.0	29.6	2.96
12	0.238	24.68	5.87	145	9.1	0.1	0.1	9.2	1.49
14	1.332	-0.40	-0.53	0	51.0	.0	.0	51.0	4.40
16	0.238	17.35	4.13	72	9.1	.0	.0	9.2	1.48

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PROJECT : GSA - 317 GOLD
SUBJECT : 5TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 285.76 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 285.76 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 5TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 4.286 ft-kips
With Force Acting Along 'X' Axis = 4.286 ft-kips

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 5TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7, '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	41.1	8.6	8.6	49.7	1.82
4	5.676	-135.34	-768.12	103.956	41.1	9.3	9.3	50.5	1.85
7	4.593	16.16	74.23	1.200	33.3	0.9	0.9	34.2	1.45
9	10.793	6.83	73.74	504	78.2	0.9	0.9	79.1	1.72
13	5.676	116.16	659.29	76.585	41.1	8.0	8.0	49.1	1.80
15	5.676	105.33	597.82	62.970	41.1	7.3	7.3	48.4	1.77
17	0.688	110.41	76.02	8.393	5.0	0.9	0.9	5.9	0.62
18	0.329	110.41	36.37	4.016	2.4	0.4	0.4	2.8	0.40
19	0.329	-129.59	-42.69	5.532	2.4	0.5	0.5	2.9	0.42

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	8.8	.0	.0	8.8	1.70
3	0.341	-24.57	-8.37	206	16.1	0.1	0.1	16.2	2.50
5	0.773	-6.82	-5.27	36	36.6	0.1	0.1	36.7	3.67
6	0.412	26.10	10.75	281	19.5	0.1	0.1	19.6	2.81
8	0.966	-19.07	-18.42	351	45.8	0.2	0.2	46.0	4.60
10	0.773	16.35	12.64	207	36.6	0.2	0.2	36.8	3.68
11	0.773	-1.32	-1.02	1	36.6	.0	.0	36.6	3.66
12	0.238	24.68	5.87	145	11.3	0.1	0.1	11.3	1.84
14	1.332	-0.40	-0.53	0	63.1	.0	.0	63.1	5.44
16	0.238	17.35	4.13	72	11.3	0.1	0.1	11.3	1.84

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PROJECT : GSA - 517 GOLD
SUBJECT : 6TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 340.43 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 340.43 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 6TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 5.106 ft-kips
With Force Acting Along 'X' Axis = 5.106 ft-kips

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 6TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	49.0	10.2	10.2	59.2	2.17
4	5.676	-135.34	-768.12	103.956	49.0	11.1	11.1	60.1	2.20
7	4.593	16.16	74.23	1.200	39.6	1.1	1.1	40.7	1.73
9	10.793	6.83	73.74	504	93.2	1.1	1.1	94.2	2.05
13	5.676	116.16	659.29	76.585	49.0	9.6	9.6	58.5	2.14
15	5.676	105.33	597.82	62.970	49.0	8.7	8.7	57.7	2.11
17	0.688	110.41	76.02	8.393	5.9	1.1	1.1	7.0	0.74
18	0.329	110.41	36.37	4.016	2.8	0.5	0.5	3.4	0.48
19	0.329	-129.59	-42.69	5.532	2.8	0.6	0.6	3.5	0.49

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	10.5	.0	.0	10.5	2.03
3	0.341	-24.57	-8.37	206	19.2	0.1	0.1	19.3	2.98
5	0.773	-6.82	-5.27	36	43.6	0.1	0.1	43.7	4.37
6	0.412	26.10	10.75	281	23.2	0.2	0.2	23.4	3.34
8	0.966	-19.07	-18.42	351	54.5	0.3	0.3	54.8	5.48
10	0.773	16.35	12.64	207	43.6	0.2	0.2	43.8	4.38
11	0.773	-1.32	-1.02	1	43.6	.0	.0	43.6	4.36
12	0.238	24.68	5.87	145	13.4	0.1	0.1	13.5	2.19
14	1.332	-0.40	-0.53	0	75.2	.0	.0	75.2	6.48
16	0.238	17.35	4.13	72	13.4	0.1	0.1	13.5	2.19

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 12. 1992

****

WALL NUMBER 1

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 5.17 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 47.632 in.

s: ==========> 9 in. Vs: 48.52906 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
1	ROOF	16.2	0	16.2	118.710	0.1774	0.0031
	8	13.8	0	30	119.919	0.3252	0.0058
	7	12.2	0	42.2	121.127	0.4529	0.0081
	6	10.5	0	52.7	122.336	0.5600	0.0100
	5	8.8	0	61.5	123.544	0.6471	0.012[illegible]
	4	7.1	0	68.6	124.753	0.7149	0.0134
	3	5.4	0	74	125.961	0.7637	0.0148
	2	3.7	0	77.7	127.170	0.7943	0.0162
	1	5.5	0	83.2	128.378	0.8425	0.0157

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANAL\GIS
DATE: FEB. 13. 1992

****

WALL NUMBER 2

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

****

WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
2	ROOF	76.5	16.2	92.7	627.537	0.1920	0.0034
	8	64.7	13.5	170.9	633.925	0.3505	0.0063
	7	56.9	11.9	239.7	640.314	0.4867	0.0089
	6	49	10.2	298.9	646.702	0.6008	0.0111
	5	41.1	8.6	348.6	653.091	0.6939	0.0129
	4	33.3	7	388.9	659.479	0.7666	0.0144
	3	25.4	5.3	419.6	665.867	0.8192	0.0155
	2	17.5	3.7	440.8	672.256	0.8524	0.0163
	1	7.6	1.6	450	678.644	0.3620	0.0167

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 3

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.5 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 62.4 in.

s: ==========> 9 in. Vs: 61.01333 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
3	ROOF	29.8	0.2	30	149.249	0.2613	0.0046
	8	25.4	0.2	55.6	150.769	0.4794	0.0086
	7	22.3	0.1	78	152.288	0.6658	0.0121
	6	19.2	0.1	97.3	153.807	0.8224	0.0151
	5	16.1	0.1	113.5	155.327	0.9499	0.0177
	4	13.1	0.1	126.7	156.846	1.0501	0.0197
	3	10	0.1	136.8	158.365	1.1230	0.0213
	2	6.9	0	143.7	159.885	1.1684	0.0224
	1	12.4	0.1	156.2	161.404	1.2581	0.0244

PROJECT: 66A - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER . 4

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 7 in. Vs: 256.3376 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
4	ROOF	76.5	17.6	94.1	627.537	0.1947	0.0034
	8	64.7	14.7	173.5	633.925	0.3558	0.0063
	7	56.9	12.9	243.3	640.314	0.4946	0.0090
	6	49	11.1	303.4	646.702	0.6099	0.0112
	5	41.1	9.3	353.8	653.091	0.7043	0.0131
	4	33.3	7.6	394.7	659.479	0.7781	0.0146
	3	25.4	5.8	425.9	665.867	0.8313	0.0158
	2	17.5	4	447.4	672.256	0.8652	0.0166
	1	11.1	2.6	461.1	678.644	0.8833	0.0171

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13, 1992

****

WALL NUMBER 5

Wall height? ====>	11 ft.	f'c:	3000 psi
Wall length? ====>	10 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	96 in.		
s: ==========>	10 in.	Vs:	76.8 kips

****

WALL NO.	LEVEL	AXIAL SHEAR (kips)	TORSIONAL SHEAR (kips)	CUM. TOT. SHEAR (kips)	FACTORED ULT. CAP. (kips)	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL (in.)
5	ROOF	67.5	0.1	67.6	188.142	0.4747	0.0085
	8	57.6	0.1	125.3	187.012	0.8710	0.0157
	7	50.6	0.1	176	188.882	1.2113	0.0223
	6	43.6	0.1	219.7	190.752	1.4973	0.0278
	5	36.6	0.1	256.4	192.622	1.7304	0.0325
	4	29.6	0.1	286.1	194.492	1.7123	0.0363
	3	22.6	0	308.7	196.362	1.6437	0.0391
	2	15.6	0	324.3	198.232	1.6267	0.0411
	1	6.9	0	331.2	200.102	1.6517	0.0420

PROJECT: GSA - 817 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 6

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 7 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 67.2 in.

s: ==========> 9 in. Vs: 50.7662 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
6	ROOF	36	0.2	36.2	160.730	0.2928	0.0052
	8	30.7	0.2	67.1	162.366	0.5372	0.0097
	7	27	0.2	94.3	164.002	0.7475	0.0136
	6	23.2	0.2	117.7	165.639	0.9238	0.0170
	5	19.5	0.1	137.3	167.275	1.0670	0.0199
	4	15.8	0.1	153.2	168.911	1.1791	0.0222
	3	12	0.1	165.3	170.547	1.2600	0.0239
	2	8.3	0.1	173.7	172.184	1.3114	0.0251
	1	3.1	0	176.8	173.820	1.3223	0.0256

PROJECT: 88A - 317 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13, 1992

****

WALL NUMBER 7

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 23.5 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 225.6 in.

s: ==========> 9 in. Vs: 220.5866 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
7	ROOF	61.9	1.6	63.5	539.595	0.1530	0.0027
	8	52.4	1.4	117.3	545.088	0.2798	0.0050
	7	46	1.2	164.5	550.581	0.3884	0.0071
	6	39.6	1.1	205.2	556.074	0.4797	0.0088
	5	33.3	0.9	239.4	561.567	0.5542	0.0103
	4	26.9	0.7	267	567.060	0.6121	0.0115
	3	20.5	0.6	288.1	572.553	0.6541	0.0124
	2	14.2	0.4	302.7	578.046	0.6808	0.0130
	1	9.1	0.3	312.1	583.540	0.6983	0.0134

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 7TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7, '92 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

Lateral Shear Force @ CM Acting Along 'X' Axis = 395.1 kips
Lateral Shear Force @ CM Acting Along 'Y' Axis = 395.1 kips

'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 7TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7, '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 5.927 ft-kips
With Force Acting Along 'X' Axis = 5.927 ft-kips

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 7TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7, '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force)	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	56.9	11.9	11.9	68.7	2.52
4	5.676	-135.34	-768.12	103.956	56.9	12.9	12.9	69.8	2.55
7	4.593	16.16	74.23	1.200	46.0	1.2	1.2	47.3	2.01
9	10.793	6.83	73.74	504	108.1	1.2	1.2	109.4	2.38
13	5.676	116.16	659.29	76.585	56.9	11.1	11.1	67.9	2.49
15	5.676	105.33	597.82	62.970	56.9	10.1	10.1	66.9	2.45
17	0.688	110.41	76.02	8.393	6.9	1.3	1.3	8.2	0.86
18	0.329	110.41	36.37	4.016	3.3	0.6	0.6	3.9	0.56
19	0.329	-129.59	-42.69	5.532	3.3	0.7	0.7	4.0	0.57

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	12.2	.0	.0	12.2	2.35
3	0.341	-24.57	-8.37	206	22.3	0.1	0.1	22.5	3.45
5	0.773	-6.82	-5.27	36	50.6	0.1	0.1	50.7	5.07
6	0.412	26.10	10.75	281	27.0	0.2	0.2	27.2	3.88
8	0.966	-19.07	-18.42	351	63.3	0.3	0.3	63.6	6.36
10	0.773	16.35	12.64	207	50.6	0.2	0.2	50.9	5.09
11	0.773	-1.32	-1.02	1	50.6	.0	.0	50.7	5.07
12	0.238	24.68	5.87	145	15.6	0.1	0.1	15.7	2.54
14	1.332	-0.40	-0.53	0	87.3	.0	.0	87.3	7.52
16	0.238	17.35	4.13	72	15.6	0.1	0.1	15.7	2.54

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 8TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 449.77 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 449.77 kios

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 8TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7, '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 6.747 ft-kips
With Force Acting Along 'X' Axis = 6.747 ft-kips

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : 8TH FLR DIAPHRAGM
RUN 1
DATE : FEB 7. '92 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	64.7	13.5	13.5	78.3	2.86
4	5.676	-135.34	-768.12	103.956	64.7	14.7	14.7	79.4	2.91
7	4.593	16.16	74.23	1.200	52.4	1.4	1.4	53.8	2.29
9	10.793	6.83	73.74	504	123.1	1.4	1.4	124.5	2.71
13	5.676	116.16	659.29	76.585	64.7	12.6	12.6	77.4	2.83
15	5.676	105.33	597.82	62.970	64.7	11.4	11.4	76.2	2.79
17	0.688	110.41	76.02	8.393	7.9	1.5	1.5	9.3	0.98
18	0.329	110.41	36.37	4.016	3.8	0.7	0.7	4.5	0.64
19	0.329	-129.59	-42.69	5.532	3.8	0.8	0.8	4.6	0.65

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	13.8	.0	.0	13.8	2.68
3	0.341	-24.57	-8.37	206	25.4	0.2	0.2	25.6	3.93
5	0.773	-6.82	-5.27	36	57.6	0.1	0.1	57.7	5.77
6	0.412	26.10	10.75	281	30.7	0.2	0.2	30.9	4.42
8	0.966	-19.07	-18.42	351	72.1	0.4	0.4	72.4	7.24
10	0.773	16.35	12.64	207	57.6	0.2	0.2	57.9	5.79
11	0.773	-1.32	-1.02	1	57.6	.0	.0	57.7	5.77
12	0.238	24.68	5.87	145	17.7	0.1	0.1	17.9	2.89
14	1.332	-0.40	-0.53	0	99.3	.0	.0	99.3	8.56
16	0.238	17.35	4.13	72	17.7	0.1	0.1	17.8	2.89

PAGE:

PROJECT : GSA-517 GOLD

SUBJECT : ROOF DIAPHRAGM

DATE : 2/7/92 BY : JMW

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 526.91 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 526.91 kips

> 'X' DIST. TO C. M. = 160.72 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51.68 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

PAGE:

PROJECT : GSA-517 GOLD

SUBJECT : ROOF DIAPHRAGM

DATE : 2/7/92 BY : JMW

X - DISTANCE TO CENTER OF RIGIDITY = 160.68 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = -0.04 ft
Y - ECC. FROM CENTER OF MASS = -2.03 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 7.904 ft-kips
With Force Acting Along 'X' Axis = 7.904 ft-kips

PAGE:
PROJECT : GSA-517 GOLD
SUBJECT : ROOF DIAPHRAGM
DATE : 2/7/92 BY : JMW

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-125.60	-712.85	89.534	76.5	16.2	16.2	92.7	3.39
4	5.676	-136.43	-774.32	105.640	76.5	17.6	17.6	94.1	3.44
7	4.593	15.07	69.21	1.043	61.9	1.6	1.6	63.5	2.70
9	10.793	5.74	61.96	356	145.4	1.4	1.4	146.8	3.19
13	5.676	115.07	653.10	75.152	76.5	14.9	14.9	91.4	3.34
15	5.676	104.24	591.63	61.672	76.5	13.5	13.5	90.0	3.29
17	0.688	109.32	75.26	8.228	9.3	1.7	1.7	11.0	1.16
18	0.329	109.32	36.01	3.937	4.4	0.8	0.8	5.3	0.75

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	16.2	.0	.0	16.2	3.14
3	0.341	-24.57	-8.37	206	29.8	0.2	0.2	29.9	4.61
5	0.773	-6.82	-5.27	36	67.5	0.1	0.1	67.7	6.77
6	0.412	26.10	10.75	281	36.0	0.2	0.2	36.2	5.17
8	0.966	-19.07	-18.42	351	84.4	0.4	0.4	84.8	8.48
10	0.773	16.35	12.64	207	67.5	0.3	0.3	67.8	6.78
11	0.773	-1.32	-1.02	1	67.5	.0	.0	67.6	6.76
12	0.238	24.68	5.87	145	20.8	0.1	0.1	20.9	3.39
14	1.332	-0.40	-0.53	0	116.4	.0	.0	116.4	10.03
16	0.238	17.35	4.13	72	20.8	0.1	0.1	20.9	3.38

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13, 1992

****

WALL NUMBER 8

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 10 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 96 in.

s: ==========> 9 in. Vs: 53.86666 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
8	ROOF	84.4	0.4	84.8	229.614	0.4801	0.0086
	8	72.1	0.4	157.3	231.952	0.8816	0.0159
	7	63.3	0.3	220.9	234.289	1.2257	0.0224
	6	54.5	0.3	275.7	236.627	1.5147	0.0279
	5	45.8	0.2	321.7	238.964	1.7501	0.0326
	4	37	0.2	358.9	241.302	1.9335	0.0364
	3	28.3	0.1	387.3	243.639	2.0665	0.0393
	2	19.5	0.1	406.9	245.977	2.1505	0.0413
	1	9	0	415.9	248.314	2.1774	0.0422

PROJECT: GSA - 517 GOLD
JOB NO.: 910621.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 9

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 46 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 441.6 in.

s: ========== 9 in. Vs: 431.7866 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
9	ROOF	145.4	1.4	146.8	1056.22	0.1807	0.0032
	8	123.1	1.4	271.3	1066.98	0.3305	0.0069
	7	108.1	1.2	380.6	1077.73	0.4591	0.0084
	6	93.2	1.1	474.9	1088.48	0.5672	0.0104
	5	78.2	0.9	554	1099.23	0.6552	0.0122
	4	63.3	0.7	618	1109.99	0.7238	0.0136
	3	48.3	0.6	666.9	1120.74	0.7736	0.0147
	2	33.3	0.4	700.6	1131.49	0.8049	0.0154
	1	18.6	0.2	719.4	1142.24	0.8188	0.0158

PROJECT: USA - 517 SOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13, 1992

WALL NUMBER 10

Wall height? ====>	11 ft.	f'c:	3000 psi
Wall length? ====>	10 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	96 in.		
s: ==========>	10 in.	Vs:	76.8 kips

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
10	ROOF	67.5	0.3	67.8	185.142	0.4761	0.0086
	8	57.6	0.2	125.6	187.012	0.8731	0.0159
	7	50.6	0.2	176.4	188.882	1.2141	0.0223
	6	43.6	0.2	220.2	190.752	1.5007	0.0279
	5	36.6	0.2	257	192.622	1.7345	0.0326
	4	29.6	0.1	286.7	194.492	1.9163	0.0363
	3	22.6	0.1	309.4	196.362	2.0484	0.0392
	2	15.6	0.1	325.1	198.232	2.1320	0.0412
	1	6.9	0	332	200.102	2.1569	0.0421

PROJECT: GSA - 517 COLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 11

Wall height? ====>	11 ft.	f'c:	3000 psi
Wall length? ====>	10 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	96 in.		
s: ==========>	10 in.	Vs:	76.8 kips

****

WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
11	ROOF	67.5	0	67.5	183.142	0.4740	0.0085
	8	57.6	0	125.1	187.012	0.8696	0.0158
	7	50.6	0	175.7	188.882	1.2093	0.0223
	6	43.6	0	219.3	190.752	1.4946	0.0278
	5	36.6	0	255.9	192.622	1.7271	0.0324
	4	29.6	0	285.5	194.492	1.9083	0.0362
	3	22.6	0	308.1	196.362	2.0397	0.0391
	2	15.6	0	323.7	198.232	2.1228	0.0410
	1	6.9	0	330.6	200.102	2.1478	0.0415

PROJECT: GSA - 317 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 12

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.17 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 59.232 in.

s: ==========> 10 in. Vs: 49.3856 kips

****

WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
12	ROOF	20.8	0.1	20.9	114.232	0.2378	0.0042
	8	17.7	0.1	38.7	115.386	0.4360	0.0079
	7	15.6	0.1	54.4	116.540	0.6068	0.0111
	6	13.4	0.1	67.9	117.694	0.7500	0.0139
	5	11.3	0.1	79.3	118.848	0.8674	0.0163
	4	9.1	0.1	88.5	120.001	0.9587	0.0182
	3	7	0	95.5	121.155	1.0247	0.0196
	2	4.8	0	100.3	122.309	1.0661	0.0206
	1	2	0	102.3	123.463	1.0772	0.0210

PROJECT: SSA - 517 SOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

WALL NUMBER 13

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fy: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

WALL NO.	LEVEL	AXIAL SHEAR (kips)	TORSIONAL SHEAR (kips)	CUM. TOT. SHEAR (kips)	FACTORED ULT. CAP. (kips)	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL (in.)
13	ROOF	76.5	14.9	91.4	627.537	0.1893	0.0033
	8	64.7	12.6	168.7	633.925	0.3460	0.0062
	7	56.9	11.1	236.7	640.314	0.4806	0.0087
	6	49	9.6	295.3	646.702	0.5936	0.0109
	5	41.1	8	344.4	653.091	0.6855	0.0127
	4	33.3	6.5	384.2	659.479	0.7574	0.0142
	3	25.4	5	414.6	665.867	0.8094	0.0154
	2	17.5	3.4	435.5	672.256	0.8422	0.0161
	1	9.3	1.9	446.7	678.644	0.8857	0.0165

PROJECT: 68A - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13, 1992

****

WALL NUMBER · 14

Wall height? ====> 11 ft. f c: 3000 psi

Wall length? ====> 11.6 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 111.36 in.

s: ==========> 9 in. Vs: 108.8853 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
14	ROOF	116.4	0	116.4	266.353	0.5681	0.0101
	8	99.3	0	215.7	269.064	1.0422	0.0188
	7	87.3	0	303	271.776	1.4494	0.0263
	6	75.2	0	378.2	274.487	1.7912	0.0331
	5	63.1	0	441.3	277.199	2.0696	0.0386
	4	51	0	492.3	279.910	2.2864	0.0430
	3	39	0	531.3	282.622	2.4439	0.0465
	2	26.9	0	558.2	285.333	2.5432	0.0488
	1	12.4	0	570.6	288.045	2.5752	0.0499

PROJECT: SSA - 517 SOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13, 1992

****

WALL NUMBER 15

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.0376 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
15	ROOF	76.5	13.5	90	627.537	0.1864	0.0033
	8	64.7	11.4	166.1	633.925	0.3406	0.0061
	7	56.9	10.1	233.1	640.314	0.4733	0.0086
	6	49	8.7	290.8	646.702	0.5846	0.0106
	5	41.1	7.3	339.2	653.091	0.6732	0.0126
	4	33.3	5.9	378.4	659.479	0.7459	0.0140
	3	25.4	4.5	408.3	665.867	0.7971	0.0151
	2	17.5	3.1	428.9	672.256	0.8294	0.0157
	1	9.3	1.7	439.9	678.644	0.8427	0.0163

PROJECT: GSA - S.F. COLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13, 1992

****

WALL NUMBER 16

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.17 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 57.232 in.

s: ==========> 10 in. Vs: 47.3856 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
16	ROOF	20.8	0.1	20.9	114.232	0.2378	0.0041
	8	17.7	0.1	38.7	115.386	0.4360	0.0079
	7	15.6	0.1	54.4	116.540	0.6068	0.0111
	6	13.4	0.1	67.9	117.694	0.7500	0.0139
	5	11.3	0.1	79.3	118.848	0.8674	0.0163
	4	9.1	0	88.4	120.001	0.9577	0.0181
	3	7	0	95.4	121.155	1.0236	0.0196
	2	4.6	0	100.2	122.309	1.0650	0.0206
	1	2	0	102.2	123.463	1.0761	0.0210

PROJECT: BSA - 317 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 17

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 9.5 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 91.2 in.

s: ==========> 10 in. Vs: 72.96 kips

****

WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
17	ROOF	9.3	1.7	11	175.885	0.0813	0.0014
	8	7.9	1.5	20.4	177.661	0.1493	0.0027
	7	6.9	1.3	28.6	179.438	0.2072	0.0038
	6	5.9	1.1	35.6	181.214	0.2554	0.0047
	5	5	0.9	41.5	182.991	0.2948	0.0055
	4	4	0.7	46.2	184.767	0.3251	0.0061
	3	3.1	0.6	49.9	186.544	0.3477	0.0066
	2	2.1	0.4	52.4	188.320	0.3617	0.0070
	1	0.9	0.2	53.5	190.097	0.3659	0.0071

PROJECT: GSA - 817 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 18

Wall height? ====>	11 ft.	f'c:	3000 psi
Wall length? ====>	7 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	67.2 in.		
s: ==========>	10 in.	Vs:	53.76 kips

****

WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
18	ROOF	4.4	0.8	5.2	129.599	0.0522	0.0009
	8	3.8	0.7	9.7	130.908	0.0963	0.0017
	7	3.3	0.6	13.6	132.217	0.1337	0.0024
	6	2.8	0.5	16.9	133.526	0.1643	0.0030
	5	2.4	0.4	19.7	134.835	0.1899	0.0035
	4	1.9	0.4	22	136.144	0.2101	0.0039
	3	1.5	0.3	23.8	137.453	0.2251	0.0043
	2	1	0.2	25	138.762	0.2342	0.0045
	1	0.6	0.1	25.7	140.071	0.2383	0.0046

PROJECT: GSA - 517 GOLD
JOB NO.: 71062.0
SUBJECT: SHEAR WALL ANALYSIS
DATE: FEB. 13. 1992

****

WALL NUMBER 19

Wall height? ====>	11 ft.	f c:	3000 psi
Wall length? ====>	7 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	67.2 in.		
s: ==========>	10 in.	Vs:	53.76 kips

****

WALL NO.	LEVEL	AXIAL SHEAR	TORSIONAL SHEAR	CUM. TOT. SHEAR	FACTORED ULT. CAP.	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL
		kips	kips	kips	kips		in.
19	ROOF	0	0	0	129.599	0.0000	0
	8	3.8	0.8	4.6	130.908	0.0457	0.0008
	7	3.3	0.7	8.6	132.217	0.0646	0.0015
	6	2.8	0.6	12	133.526	0.1168	0.0021
	5	2.4	0.5	14.9	134.835	0.1437	0.0027
	4	1.9	0.4	17.2	136.144	0.1642	0.0031
	3	1.5	0.3	19	137.453	0.1797	0.0034
	2	1	0.2	20.2	138.762	0.1892	0.0036
	1	0.6	0.1	20.9	140.071	0.1940	0.0037

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- ☐ Memorandum
- ☐ Telephone record
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- ☐ Minutes of meeting
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SEISMIC ANALYSIS
2nd ITERATION

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Designing to Shape the Future

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STRUCTURAL DEAD LOADS - PRELIM - 1ST THRU 8TH FLRS

UNIFORM LOADS

2-WAY SLAB	100 psf
PARTITIONS	15 "
FLOORING (CARPET OR VCT)	1 psf
SUSPENDED CEILING (SUSP. SYS, PLASTER, TILE)	= 14 psf
MECHANICAL	4 psf
ELECTRICAL	2 psf
	136 psf

TYP. FLR AREA = 101.25' x 299.25' = 30,299 SF

UNIFORM LOAD/FLR = (0.136)(30299) = 4121 k

OTHER LOADS:

DROPPED PANELS: 42(8.33)²(.33)(.15) = 144 k
SPANDREL BEAM: 2.33 FT² (801)(.15) = 280 k
WALL ASSEMBLY
BRICK VENEER = 39
8" ~~6~~" CLAY TILE = ~~24~~ 30
3/4" PLASTER = 10 psf
79 ~~73~~ psf (11')(559) = ~~450~~ 486 k
WINDOWS = 64/FLR (3'-10" WIDE)
8(3.83)(64)(11) = 22 k
COLUMNS - VARY FROM 12"x12" TO 34"x34"
SAY 24" SQUARE (65/FLR)
2(2)(11)(.15)(65) = 429 k

TOTAL LOAD PER FLOOR = ~~5,446~~ 5,482 k

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STRUCTURAL DEAD LOADS - PRELIM - ROOF

UNIFORM LOADS

2-WAY SLAB	100 psf
SUSP. CEIL.	14 psf
MECH.	4 psf
ELEC.	2 psf
	120 psf

GROSS ROOF AREA = 30,299 SF

TOTAL UNIFORM LOADS = 0.120(30,299) = 3636 k

OTHER LOADS:

BUR - 6psf(30,299-1247.5)	=	174 k
ROOF INSUL. - 3psf(30,299-1247.5)	=	87 k
WALLS - ~~75~~ 79(559)(6)	=	~~245~~ k 265 k
DROPPED PANELS	=	144 k
WINDOWS - 8(3.83)(64)(6)	=	12 k
SPANDREL BEAM	=	280 k
COLUMNS (1)(1)(6)(.15)(65)	=	59 k

TOTAL CONCENTRIC LOADS = ~~4637~~ k 4657 k

ECCENTRIC LOADS

EAST STAIR WALLS (.83)(110)(16.5)(.15) = 226 k

BRICK & TILE WALL (12)(.063)(350) = 265 k

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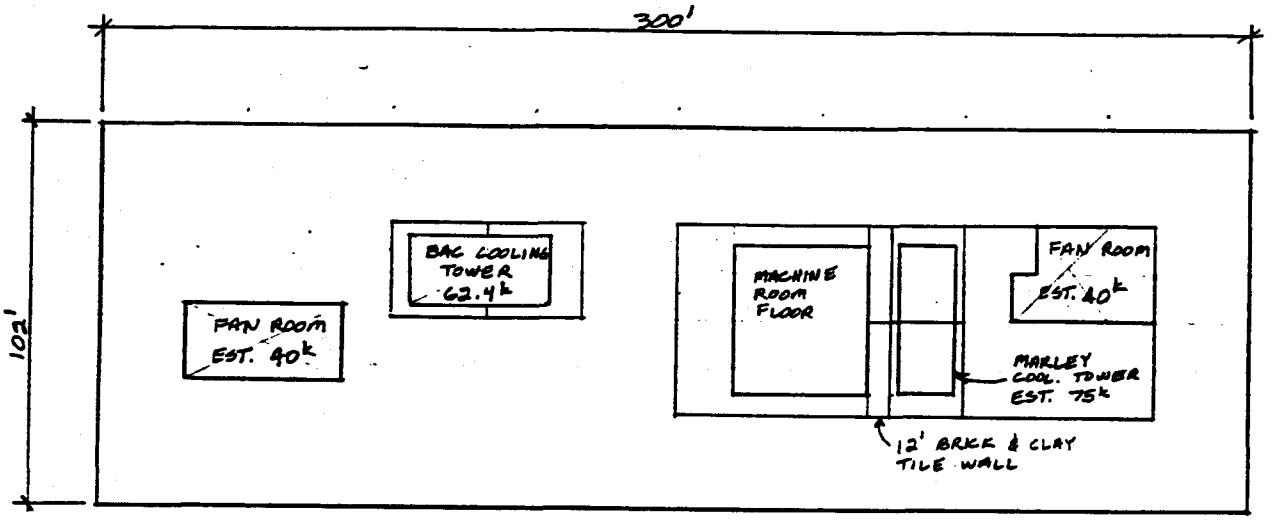
Project GSA

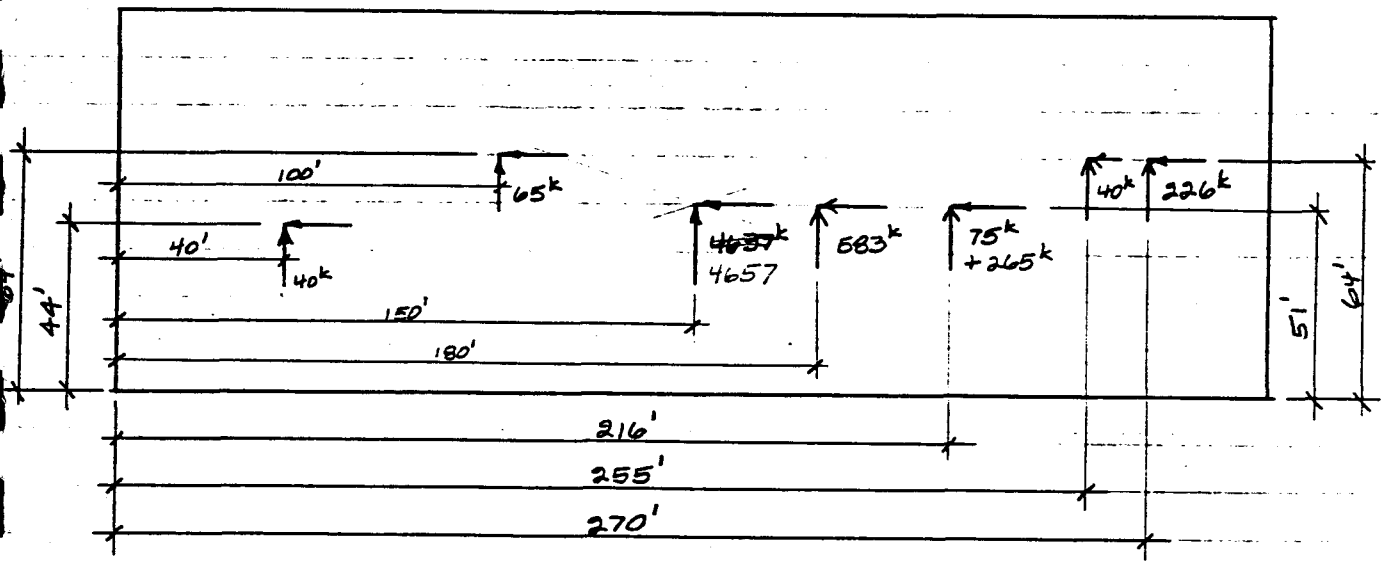
Subject ROOF LOADS

Project No. 91062.001 Date 2/7/92 By JMW

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
- ☐ To be typed
- ☐ _____



ROOF PLAN



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June 1990

Designing to Shape the Future

BPLW
Architects & Engineers, Inc.
2400 Louisiana Blvd. NE
APC #5 Suite 400
Albuquerque, NM 87110
(505) 881-2759
63 East Main Street
Suite 602
Mesa, AZ 85201
(602) 827-2759

Project GSA - 517 GOLD
Subject SEISMIC - ROOF
Project No. 91062.001 Date 2/7/92 By JMW

☐ Memorandum
☐ Telephone record
☐ Note to the file
☐ Minutes of meeting
☐ To be typed
☐ _____

$$\cancel{5931}\ 5951\ \bar{x} = 40(40) + 65(100) + \cancel{4637}\ 4657(150) + 583(180) + 340(216) + 40(255) + 226(270)$$

$$\bar{x} = \cancel{160.79'}\ 160.69'$$

$$\cancel{5931}\ 5951\ \bar{y} = 40(44) + 65(64) + \cancel{5560}\ 5580(51) + 266(64)$$

$$\bar{y} = 51.68'$$

Copies to:

June 1990

Designing to Shape the Future

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.001
SUBJECT: SEISMIC ANAL. - 2ND RUN
DATE: FEB. 18, 1992

****

VERTICAL DISTRIBUTION OF SEISMIC FORCES

Template by Jason M. Weaver 2/5/92

****

DETERMINATION OF STRUCTURE PERIOD: (1991 UBC Method A)

Overall building height? ==========> 101.50 ft

Value of Ct? ==========> 0.02

Structure Period: ....T = 0.64 seconds

DETERMINATION OF COEFFICIENT "C": (1991 UBC)

Site coefficient (Table No. 23-J)? ========> 1.20

Structural system factor (Rw)? ==========> 8.00

Calculated value of "C"..... 2.021

VALUE OF "C" USED FOR BASE SHEAR CALCULATION: 2.021

CALCULATION OF BASE SHEAR "V":

Seismic zone factor "Z"? ==========> 0.20

Importance factor "I"? ==========> 1.00

Seismic dead load "W"? ==========> 52591.00 kips

CALCULATED BASE SHEAR: .... V = 2656.78 kips

CALCULATED FORCE AT TOP ... Ft = 0.00 kips

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.001
SUBJECT: SEISMIC ANAL. - 2ND RUN
DATE: FEB. 18. 1992

****

VERTICAL DISTRIBUTION OF FORCES

****

Level	Load (kips)	Height (feet)	w*h	Force (kips)	
Top	5951.00	101.50	604026.5	529.75	(Includes Ft)
8	5830.00	90.50	527615.0	462.73	
7	5830.00	79.50	463485.0	406.49	
6	5830.00	68.50	399355.0	350.25	
5	5830.00	57.50	335225.0	294.00	
4	5830.00	46.50	271095.0	237.76	
3	5830.00	35.50	206965.0	181.51	
2	5830.00	24.50	142835.0	125.27	
1	5830.00	13.50	78705.0	69.03	
Total "W"	52591.0			2656.78	

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

ESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 529.75 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 529.75 kips

> 'X' DIST. TO C. M. = 160.69 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51.68 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	> WALL THICKNESS (in)	> WALL LENGTH (ft)	> WALL HEIGHT (ft)	> X-DIST. FROM DATUM	>END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	> WALL THICKNESS (in)	> WALL LENGTH (ft)	> WALL HEIGHT (ft)	> Y-DIST FROM DATUM	>END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 160.68 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = -0.01 ft
Y - ECC. FROM CENTER OF MASS = -2.03 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 7.946 ft-kips
With Force Acting Along 'X' Axis = 7.946 ft-kips

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-125.60	-712.85	89.534	76.9	16.3	16.3	93.2	3.41
4	5.676	-136.43	-774.32	105.640	76.9	17.7	17.7	94.6	3.46
7	4.593	15.07	69.21	1.043	62.2	1.6	1.6	63.8	2.71
9	10.793	5.74	61.96	356	146.2	1.4	1.4	147.6	3.21
13	5.676	-115.07	653.10	75.152	76.9	15.0	15.0	91.8	3.36
15	5.676	104.24	591.63	61.672	76.9	13.6	13.6	90.4	3.31
17	0.688	109.32	75.26	8.228	9.3	1.7	1.7	11.1	1.16
18	0.329	109.32	36.01	3.937	4.5	0.8	0.8	5.3	0.76

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	16.3	.0	.0	16.3	3.15
3	0.341	-24.57	-8.37	206	29.9	0.2	0.2	30.1	4.63
5	0.773	-6.82	-5.27	36	67.9	0.1	0.1	68.0	6.80
6	0.412	26.10	10.75	281	36.2	0.2	0.2	36.4	5.20
8	0.966	-19.07	-18.42	351	84.9	0.4	0.4	85.3	8.53
10	0.773	16.35	12.64	207	67.9	0.3	0.3	68.2	6.82
11	0.773	-1.32	-1.02	1	67.9	.0	.0	67.9	6.79
12	0.238	24.68	5.87	145	20.9	0.1	0.1	21.0	3.41
14	1.332	-0.40	-0.53	0	117.0	.0	.0	117.0	10.09
16	0.238	17.35	4.13	72	20.9	0.1	0.1	21.0	3.40

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 462.73 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 462.73 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 6.941 ft-kips
With Force Acting Along 'X' Axis = 6.941 ft-kips

SUBJECT : TORSIONAL ANALYSIS
FLR 8 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RISIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	66.6	13.9	13.9	80.5	2.95
4	5.676	-135.34	-768.12	103.956	66.6	15.1	15.1	81.7	2.99
7	4.593	16.16	74.23	1.200	53.9	1.5	1.5	55.4	2.36
9	10.793	6.83	73.74	504	126.6	1.5	1.5	128.1	2.78
13	5.676	116.16	659.29	76.585	66.6	13.0	13.0	79.6	2.91
15	5.676	105.33	597.82	62.970	66.6	11.8	11.8	78.4	2.87
17	0.688	110.41	76.02	8.393	8.1	1.5	1.5	9.6	1.01
18	0.329	110.41	36.37	4.016	3.9	0.7	0.7	4.6	0.65
19	0.329	-129.59	-42.69	5.532	3.9	0.8	0.8	4.7	0.67

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	14.2	.0	.0	14.2	2.75
3	0.341	-24.57	-8.37	206	26.1	0.2	0.2	26.3	4.05
5	0.773	-6.82	-5.27	36	59.3	0.1	0.1	59.4	5.94
6	0.412	26.10	10.75	281	31.6	0.2	0.2	31.8	4.54
8	0.966	-19.07	-18.42	351	74.1	0.4	0.4	74.5	7.45
10	0.773	16.35	12.64	207	59.3	0.2	0.2	59.6	5.96
11	0.773	-1.32	-1.02	1	59.3	.0	.0	59.3	5.93
12	0.238	24.68	5.87	145	18.3	0.1	0.1	18.4	2.98
14	1.332	-0.40	-0.53	0	102.2	.0	.0	102.2	8.81
16	0.238	17.35	4.13	72	18.3	0.1	0.1	18.3	2.97

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 7 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

ESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 406.49 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 406.49 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

PAGE: _____

PROJECT : GSA - 517 GOLD

SUBJECT : TORSIONAL ANALYSIS
FLR 7 - 2ND ITERATION

DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO `X` AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 6.097 ft-kips
With Force Acting Along 'X' Axis = 6.097 ft-kips

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 7 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	58.5	12.2	12.2	70.7	2.59
4	5.676	-135.34	-768.12	103.956	58.5	13.3	13.3	71.8	2.63
7	4.593	16.16	74.23	1.200	47.3	1.3	1.3	48.6	2.07
9	10.793	6.83	73.74	504	111.3	1.3	1.3	112.5	2.45
13	5.676	116.16	659.29	76.585	58.5	11.4	11.4	69.9	2.56
15	5.676	105.33	597.82	62.970	58.5	10.3	10.3	68.8	2.52
17	0.688	110.41	76.02	8.393	7.1	1.3	1.3	8.4	0.89
18	0.329	110.41	36.37	4.016	3.4	0.6	0.6	4.0	0.58
19	0.329	-129.59	-42.69	5.532	3.4	0.7	0.7	4.1	0.59

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	12.5	.0	.0	12.5	2.42
3	0.341	-24.57	-8.37	206	23.0	0.1	0.1	23.1	3.55
5	0.773	-6.82	-5.27	36	52.1	0.1	0.1	52.2	5.22
6	0.412	26.10	10.75	281	27.8	0.2	0.2	27.9	3.99
8	0.966	-19.07	-18.42	351	65.1	0.3	0.3	65.4	6.54
10	0.773	16.35	12.64	207	52.1	0.2	0.2	52.3	5.23
11	0.773	-1.32	-1.02	1	52.1	.0	.0	52.1	5.21
12	0.238	24.68	5.87	145	16.0	0.1	0.1	16.1	2.62
14	1.332	-0.40	-0.53	0	89.8	.0	.0	89.8	7.74
16	0.238	17.35	4.13	72	16.0	0.1	0.1	16.1	2.61

PAGE: _____

PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 6 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION - FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 350.25 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 350.25 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 6 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 5.254 ft-kips
With Force Acting Along 'X' Axis = 5.254 ft-kips

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--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	50.4	10.5	10.5	60.9	2.23
4	5.676	-135.34	-768.12	103.956	50.4	11.5	11.5	61.9	2.26
7	4.593	16.16	74.23	1.200	40.8	1.1	1.1	41.9	1.78
9	10.793	6.83	73.74	504	95.9	1.1	1.1	97.0	2.11
13	5.676	116.16	659.29	76.585	50.4	9.8	9.8	60.2	2.20
15	5.676	105.33	597.82	62.970	50.4	8.9	8.9	59.3	2.17
17	0.688	110.41	76.02	8.393	6.1	1.1	1.1	7.2	0.76
18	0.329	110.41	36.37	4.016	2.9	0.5	0.5	3.5	0.50
19	0.329	-129.59	-42.69	5.532	2.9	0.6	0.6	3.6	0.51

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	10.8	.0	.0	10.8	2.08
3	0.341	-24.57	-8.37	206	19.8	0.1	0.1	19.9	3.06
5	0.773	-6.82	-5.27	36	44.9	0.1	0.1	45.0	4.50
6	0.412	26.10	10.75	281	23.9	0.2	0.2	24.1	3.44
8	0.966	-19.07	-18.42	351	56.1	0.3	0.3	56.4	5.64
10	0.773	16.35	12.64	207	44.9	0.2	0.2	45.1	4.51
11	0.773	-1.32	-1.02	1	44.9	.0	.0	44.9	4.49
12	0.238	24.68	5.87	145	13.8	0.1	0.1	13.9	2.25
14	1.332	-0.40	-0.53	0	77.4	.0	.0	77.4	6.67
16	0.238	17.35	4.13	72	13.8	0.1	0.1	13.9	2.25

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 5 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 294 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 294 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 5 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 4.410 ft-kips
With Force Acting Along 'X' Axis = 4.410 ft-kips

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PROJECT : GSA - 517 GOLD
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FLR 5 - 2ND ITERATION
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--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	42.3	8.8	8.8	51.2	1.87
4	5.676	-135.34	-768.12	103.956	42.3	9.6	9.6	51.9	1.90
7	4.593	16.16	74.23	1.200	34.2	0.9	0.9	35.2	1.50
9	10.793	6.83	73.74	504	80.5	0.9	0.9	81.4	1.77
13	5.676	116.16	659.29	76.585	42.3	8.2	8.2	50.6	1.85
15	5.676	105.33	597.82	62.970	42.3	7.5	7.5	49.8	1.82
17	0.688	110.41	76.02	8.393	5.1	1.0	1.0	6.1	0.64
18	0.329	110.41	36.37	4.016	2.5	0.5	0.5	2.9	0.42
19	0.329	-129.59	-42.69	5.532	2.5	0.5	0.5	3.0	0.43

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	9.0	.0	.0	9.0	1.75
3	0.341	-24.57	-8.37	206	16.6	0.1	0.1	16.7	2.57
5	0.773	-6.82	-5.27	36	37.7	0.1	0.1	37.7	3.77
6	0.412	26.10	10.75	281	20.1	0.1	0.1	20.2	2.89
8	0.966	-19.07	-18.42	351	47.1	0.2	0.2	47.3	4.73
10	0.773	16.35	12.64	207	37.7	0.2	0.2	37.8	3.78
11	0.773	-1.32	-1.02	1	37.7	.0	.0	37.7	3.77
12	0.238	24.68	5.87	145	11.6	0.1	0.1	11.7	1.89
14	1.332	-0.40	-0.53	0	64.9	.0	.0	64.9	5.60
16	0.238	17.35	4.13	72	11.6	0.1	0.1	11.7	1.89

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 4 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

ESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 237.76 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 237.76 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

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PROJECT : GSA - 517 GOLD
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FLR 4 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 3.566 ft-kips
With Force Acting Along 'X' Axis = 3.566 ft-kips

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 4 - 2ND ITERATION
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--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	34.2	7.2	7.2	41.4	1.51
4	5.676	-135.34	-768.12	103.956	34.2	7.8	7.8	42.0	1.54
7	4.593	16.16	74.23	1.200	27.7	0.8	0.8	28.4	1.21
9	10.793	6.83	73.74	504	65.1	0.7	0.7	65.8	1.43
13	5.676	116.16	659.29	76.585	34.2	6.7	6.7	40.9	1.50
15	5.676	105.33	597.82	62.970	34.2	6.0	6.0	40.3	1.47
17	0.688	110.41	76.02	8.393	4.2	0.8	0.8	4.9	0.52
18	0.329	110.41	36.37	4.016	2.0	0.4	0.4	2.4	0.34
19	0.329	-129.59	-42.69	5.532	2.0	0.4	0.4	2.4	0.35

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	7.3	.0	.0	7.3	1.42
3	0.341	-24.57	-8.37	206	13.4	0.1	0.1	13.5	2.08
5	0.773	-6.82	-5.27	36	30.5	0.1	0.1	30.5	3.05
6	0.412	26.10	10.75	281	16.2	0.1	0.1	16.3	2.33
8	0.966	-19.07	-18.42	351	38.1	0.2	0.2	38.3	3.83
10	0.773	16.35	12.64	207	30.5	0.1	0.1	30.6	3.06
11	0.773	-1.32	-1.02	1	30.5	.0	.0	30.5	3.05
12	0.238	24.68	5.87	145	9.4	0.1	0.1	9.4	1.53
14	1.332	-0.40	-0.53	0	52.5	.0	.0	52.5	4.53
16	0.238	17.35	4.13	72	9.4	.0	.0	9.4	1.53

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 3 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 181.51 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 181.51 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 3 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 2.723 ft-kips
With Force Acting Along 'X' Axis = 2.723 ft-kips

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 3 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	26.1	5.5	5.5	31.6	1.16
4	5.676	-135.34	-768.12	103.956	26.1	5.9	5.9	32.1	1.17
7	4.593	16.16	74.23	1.200	21.1	0.6	0.6	21.7	0.92
9	10.793	6.83	73.74	504	49.7	0.6	0.6	50.2	1.09
13	5.676	116.16	659.29	76.585	26.1	5.1	5.1	31.2	1.14
15	5.676	105.33	597.82	62.970	26.1	4.6	4.6	30.7	1.12
17	0.688	110.41	76.02	8.393	3.2	0.6	0.6	3.8	0.40
18	0.329	110.41	36.37	4.016	1.5	0.3	0.3	1.8	0.26
19	0.329	-129.59	-42.69	5.532	1.5	0.3	0.3	1.8	0.26

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	5.6	.0	.0	5.6	1.08
3	0.341	-24.57	-8.37	206	10.3	0.1	0.1	10.3	1.59
5	0.773	-6.82	-5.27	36	23.3	.0	.0	23.3	2.33
6	0.412	26.10	10.75	281	12.4	0.1	0.1	12.5	1.78
8	0.966	-19.07	-18.42	351	29.1	0.1	0.1	29.2	2.92
10	0.773	16.35	12.64	207	23.3	0.1	0.1	23.4	2.34
11	0.773	-1.32	-1.02	1	23.3	.0	.0	23.3	2.33
12	0.238	24.68	5.87	145	7.2	.0	.0	7.2	1.17
14	1.332	-0.40	-0.53	0	40.1	.0	.0	40.1	3.46
16	0.238	17.35	4.13	72	7.2	.0	.0	7.2	1.17

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 2 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

DESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 125.27 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 125.27 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	X-DIST. FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	27.33	11	35.08	1	0.402	5.675608795	199.10
4	10	27.33	11	24.25	1	0.402	5.675608795	137.63
7	10	23.5	11	175.75	1	0.468	4.592653735	807.16
9	10	46	11	166.42	1	0.239	10.79323681	1796.21
13	10	27.33	11	275.75	1	0.402	5.675608795	1565.05
15	10	27.33	11	264.92	1	0.402	5.675608795	1503.58
17	8	9.5	11	270	1	1.158	0.688467985	185.89
18	8	7	11	270	1	1.571	0.329443403	88.95
19	8	7	11	30	1	1.571	0.329443403	9.88

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 2 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	5.17	11	50.75	1	2.128	0.185555936	9.42
3	10	6.5	11	25.08	1	1.692	0.340645505	8.54
5	8	10	11	42.83	1	1.100	0.773036487	33.11
6	10	7	11	75.75	1	1.571	0.411804254	31.19
8	10	10	11	30.58	1	1.100	0.966295609	29.55
10	8	10	11	66	1	1.100	0.773036487	51.02
11	8	10	11	48.33	1	1.100	0.773036487	37.36
12	8	6.17	11	74.33	1	1.783	0.237968939	17.69
14	10	11.6	11	49.25	1	0.948	1.332120775	65.61
16	8	6.17	11	67	1	1.783	0.237968939	15.94

X - DISTANCE TO CENTER OF RIGIDITY = 159.59 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 49.65 ft

X - ECC. FROM CENTER OF MASS = 9.59 ft
Y - ECC. FROM CENTER OF MASS = -1.35 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 1.879 ft-kips
With Force Acting Along 'X' Axis = 1.879 ft-kips

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 2 - 2ND ITERATION
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--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	5.676	-124.51	-706.66	87.984	18.0	3.8	3.8	21.8	0.80
4	5.676	-135.34	-768.12	103.956	18.0	4.1	4.1	22.1	0.81
7	4.593	16.16	74.23	1.200	14.6	0.4	0.4	15.0	0.64
9	10.793	6.83	73.74	504	34.3	0.4	0.4	34.7	0.75
13	5.676	116.16	659.29	76.585	18.0	3.5	3.5	21.5	0.79
15	5.676	105.33	597.82	62.970	18.0	3.2	3.2	21.2	0.78
17	0.688	110.41	76.02	8.393	2.2	0.4	0.4	2.6	0.27
18	0.329	110.41	36.37	4.016	1.0	0.2	0.2	1.2	0.18
19	0.329	-129.59	-42.69	5.532	1.0	0.2	0.2	1.3	0.18

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.186	1.10	0.21	0	3.9	.0	.0	3.9	0.75
3	0.341	-24.57	-8.37	206	7.1	.0	.0	7.1	1.10
5	0.773	-6.82	-5.27	36	16.1	.0	.0	16.1	1.61
6	0.412	26.10	10.75	281	8.6	0.1	0.1	8.6	1.23
8	0.966	-19.07	-18.42	351	20.1	0.1	0.1	20.2	2.02
10	0.773	16.35	12.64	207	16.1	0.1	0.1	16.1	1.61
11	0.773	-1.32	-1.02	1	16.1	.0	.0	16.1	1.61
12	0.238	24.68	5.87	145	4.9	.0	.0	5.0	0.81
14	1.332	-0.40	-0.53	0	27.7	.0	.0	27.7	2.39
16	0.238	17.35	4.13	72	4.9	.0	.0	5.0	0.80

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 1 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

LATERAL & TORSIONAL FORCE DISTRIBUTION FOR RIGID DIAPHRAGMS

ESCRIPTION :

DIAPHRAGM LEVEL :

> Lateral Shear Force @ CM Acting Along 'X' Axis = 69.03 kips
> Lateral Shear Force @ CM Acting Along 'Y' Axis = 69.03 kips

> 'X' DIST. TO C. M. = 150 ft MAX. 'X' DIM. = 300 ft
> 'Y' DIST. TO C. M. = 51 ft MAX. 'Y' DIM. = 102 ft
(Used for Min Eccentricity)

DETERMINE CENTER OF RIGIDITY

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	> WALL THICKNESS (in)	> WALL LENGTH (ft)	> WALL HEIGHT (ft)	> X-DIST. FROM DATUM	>END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
2	10	24	13.5	35.08	1	0.563	3.473070139	121.84
4	12	27.33	13.5	24.33	1	0.494	5.091665546	123.88
7	12	24	13.5	175.67	1	0.563	4.167684167	732.14
9	10	46	13.5	166.42	1	0.293	8.490031173	1412.91
13	10	27.33	13.5	275.75	1	0.494	4.243054621	1170.02
15	10	27.33	13.5	264.92	1	0.494	4.243054621	1124.07
17	8	9.5	13.5	270	1	1.421	0.423500937	114.35
18	8	7.83	13.5	270	1	1.724	0.259671537	70.11
19	8	7.83	13.5	30	1	1.724	0.259671537	7.79
20	12	100	13.5	0.5	1	0.135	24.10559213	12.05
21	12	100	13.5	299.5	1	0.135	24.10559213	7219.62

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 1 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	WALL THICKNESS (in)	WALL LENGTH (ft)	WALL HEIGHT (ft)	Y-DIST FROM DATUM	END TYPE FIXED=0 CANT=1	H / L	RELATIVE STIFFNESS WALL/FRAME	STIFFNESS x DISTANCE
1	10	8.33	13.5	50.75	1	1.621	0.380717764	19.32
3	10	11.67	13.5	25.08	1	1.157	0.862423700	21.63
5	8	10	13.5	42.83	1	1.350	0.479909777	20.55
6	10	6.67	13.5	75.75	1	2.024	0.212383195	16.09
8	10	10.17	13.5	30.58	1	1.327	0.624758933	19.11
10	8	10	13.5	66	1	1.350	0.479909777	31.67
11	8	10	13.5	48.33	1	1.350	0.479909777	23.19
12	8	6.17	13.5	74.33	1	2.188	0.137561345	10.22
14	10	11.67	13.5	49.25	1	1.157	0.862423700	42.47
16	8	6.17	13.5	67	1	2.188	0.137561345	9.22
22	12	300	13.5	0.5	1	0.045	73.87461262	36.94
23	12	300	13.5	101.5	1	0.045	73.87461262	7498.27

PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 1 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

X - DISTANCE TO CENTER OF RIGIDITY = 153.54 ft
Y - DISTANCE TO CENTER OF RIGIDITY = 50.84 ft

X - ECC. FROM CENTER OF MASS = 3.54 ft
Y - ECC. FROM CENTER OF MASS = -0.16 ft

MIN. ECCENTRICITY =.05 * Max Length= 15.00 ft

DESIGN ECCENTRICITIES (From Center of Mass)

X : ECCENTRICITY = 15.00 ft
Y : ECCENTRICITY = 15.00 ft

DETERMINE WALL/FRAME FORCES DUE TO SHEAR & TORSION

TORSIONS :
With Force Acting Along 'Y' Axis = 1.035 ft-kips
With Force Acting Along 'X' Axis = 1.035 ft-kips

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PROJECT : GSA - 517 GOLD
SUBJECT : TORSIONAL ANALYSIS
FLR 1 - 2ND ITERATION
DATE : FEB 19 1922 BY : _____

--> WALLS/FRAMES PARALLEL TO 'Y' AXIS

WALL I.D. NUMBER	RELATIVE STIFF. WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
2	3.473	-118.46	-411.43	48.739	3.0	0.2	0.2	3.3	0.14
4	5.092	-129.21	-657.91	85.010	4.5	0.4	0.4	4.9	0.18
7	4.168	22.13	92.22	2.041	3.6	0.1	0.1	3.7	0.15
9	8.490	12.88	109.33	1.408	7.4	0.1	0.1	7.5	0.16
13	4.243	122.21	518.53	63,368	3.7	0.3	0.3	4.0	0.15
15	4.243	111.38	472.58	52.635	3.7	0.3	0.3	4.0	0.15
17	0.424	116.46	49.32	5.744	0.4	.0	.0	0.4	0.04
18	0.260	116.46	30.24	3.522	0.2	.0	.0	0.2	0.03
19	0.260	-123.54	-32.08	3.963	0.2	.0	.0	0.2	0.03
20	24.106	-153.04	-3689.19	564.603	21.1	2.2	2.2	23.3	0.23
21	24.106	145.96	3518.39	513.534	21.1	2.1	2.1	23.2	0.23

--> WALLS/FRAMES PARALLEL TO 'X' AXIS

WALL I.D. NUMBER	RELATIVE STIFFNESS WALL/FRAME	DIST. TO CENTER OF RIGIDITY	RIGIDITY x DISTANCE	RIGIDITY x DIST^2	-- FORCES -- LATERAL FORCE	TORSIONAL FORCE	Alternate Tors. Force	TOTAL FORCE (kips)	UNIT FORCE (klf)
1	0.381	-0.09	-0.04	0	0.2	.0	.0	0.2	0.02
3	0.862	-25.76	-22.22	572	0.4	.0	.0	0.4	0.03
5	0.480	-8.01	-3.85	31	0.2	.0	.0	0.2	0.02
6	0.212	24.91	5.29	132	0.1	.0	.0	0.1	0.01
8	0.625	-20.26	-12.66	256	0.3	.0	.0	0.3	0.03
10	0.480	15.16	7.27	110	0.2	.0	.0	0.2	0.02
11	0.480	-2.51	-1.21	3	0.2	.0	.0	0.2	0.02
12	0.138	23.49	3.23	76	0.1	.0	.0	0.1	0.01
14	0.862	-1.59	-1.37	2	0.4	.0	.0	0.4	0.03
16	0.138	16.16	2.22	36	0.1	.0	.0	0.1	0.01
22	73.875	-50.34	-3719.01	187.223	33.5	2.2	2.2	35.7	0.12
23	73.875	50.66	3742.33	189.578	33.5	2.2	2.2	35.7	0.12

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19, 1992

****

WALL NUMBER 1

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 5.17 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 49.632 in.

s: ==========> 9 in. Vs: 48.52906 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
1	ROOF	16.3	0	16.3	118.710	0.1785	0.0032
	8	14.2	0	30.5	119.919	0.3306	0.0059
	7	12.5	0	43	121.127	0.4615	0.0084
	6	10.8	0	53.8	122.336	0.5717	0.0105
	5	9	0	62.8	123.544	0.6608	0.0123
	4	7.3	0	70.1	124.753	0.7305	0.0137
	3	5.6	0	75.7	125.961	0.7813	0.0148
	2	3.9	0	79.6	127.170	0.8137	0.0156
	1	0.2	0	79.8	128.378	0.8081	0.0156

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

****

WALL NUMBER 2

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
2	ROOF	76.9	16.3	93.2	627.537	0.1931	0.0034
	8	66.6	13.9	173.7	633.925	0.3562	0.0064
	7	58.5	12.2	244.4	640.314	0.4962	0.0090
	6	50.4	10.5	305.3	646.702	0.6137	0.0113
	5	42.3	8.8	356.4	653.091	0.7094	0.0132
	4	34.2	7.2	397.8	659.479	0.7842	0.0147
	3	26.1	5.5	429.4	665.867	0.8383	0.0159
	2	18	3.8	451.2	672.256	0.8725	0.0167
	1	3	0.2	454.4	678.644	0.8704	0.0168

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

****

WALL NUMBER 3

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.5 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 62.4 in.

s: ==========> 9 in. Vs: 61.01333 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
3	ROOF	29.9	0.2	30.1	149.249	0.2622	0.0047
	8	26.1	0.2	56.4	150.769	0.4863	0.0088
	7	23	0.1	79.5	152.288	0.6786	0.0124
	6	19.8	0.1	99.4	153.807	0.8401	0.0155
	5	16.6	0.1	116.1	155.327	0.9717	0.0181
	4	13.4	0.1	129.6	156.846	1.0742	0.0202
	3	10.3	0.1	140	158.365	1.1492	0.0218
	2	7.1	0	147.1	159.885	1.1960	0.0229
	1	0.4	0.1	147.6	161.404	1.1888	0.0230

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 4

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
4	ROOF	76.9	17.7	94.6	627.537	0.1960	0.0035
	8	66.6	15.1	176.3	633.925	0.3615	0.0065
	7	58.5	13.3	248.1	640.314	0.5037	0.0092
	6	50.4	11.5	310	646.702	0.6232	0.0115
	5	42.3	9.6	361.9	653.091	0.7204	0.0134
	4	34.2	7.8	403.9	659.479	0.7962	0.0150
	3	26.1	5.9	435.9	665.867	0.8510	0.0161
	2	18	4.1	458	672.256	0.8857	0.0170
	1	4.5	0.4	462.9	678.644	0.8867	0.0171

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 5

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 10 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 96 in.

s: ==========> 10 in. Vs: 76.8 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
5	ROOF	67.9	0.1	68	185.142	0.4775	0.0086
	8	59.3	0.1	127.4	187.012	0.8856	0.0161
	7	52.1	0.1	179.6	188.882	1.2361	0.0227
	6	44.9	0.1	224.6	190.752	1.5307	0.0285
	5	37.7	0.1	262.4	192.622	1.7709	0.0333
	4	30.5	0.1	293	194.492	1.9584	0.0371
	3	23.3	0	316.3	196.362	2.0940	0.0401
	2	16.1	0	332.4	198.232	2.1799	0.0421
	1	0.2	0	332.6	200.102	2.1608	0.0422

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 6

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 7 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 67.2 in.

s: ==========> 9 in. Vs: 65.70666 kips

****

WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
6	ROOF	36.2	0.2	36.4	160.730	0.2944	0.0052
	8	31.6	0.2	68.2	162.366	0.5460	0.0098
	7	27.8	0.2	96.2	164.002	0.7625	0.0139
	6	23.9	0.2	120.3	165.639	0.9442	0.0174
	5	20.1	0.1	140.5	167.275	1.0919	0.0203
	4	16.2	0.1	156.8	168.911	1.2068	0.0227
	3	12.4	0.1	169.3	170.547	1.2905	0.0245
	2	8.6	0.1	178	172.184	1.3439	0.0258
	1	0.1	0	178.1	173.820	1.3320	0.0258

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 7

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 23.5 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 225.6 in.

s: ==========> 9 in. Vs: 220.5866 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
7	ROOF	62.2	1.6	63.8	539.595	0.1537	0.0027
	8	53.9	1.5	119.2	545.088	0.2843	0.0051
	7	47.3	1.3	167.8	550.581	0.3962	0.0072
	6	40.8	1.1	209.7	556.074	0.4902	0.0090
	5	34.2	0.9	244.8	561.567	0.5667	0.0105
	4	27.7	0.8	273.3	567.060	0.6265	0.0118
	3	21.1	0.6	295	572.553	0.6698	0.0127
	2	14.6	0.4	310	578.046	0.6972	0.0133
	1	3.6	0.1	313.7	583.540	0.6989	0.0135

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 8

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 10 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 96 in.

s: ==========> 9 in. Vs: 93.86666 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
8	ROOF	84.9	0.4	85.3	229.614	0.4829	0.0086
	8	74.1	0.4	159.8	231.952	0.8956	0.0162
	7	65.1	0.3	225.2	234.289	1.2496	0.0228
	6	56.1	0.3	281.6	236.627	1.5471	0.0285
	5	47.1	0.2	328.9	238.964	1.7893	0.0333
	4	38.1	0.2	367.2	241.302	1.9783	0.0372
	3	29.1	0.1	396.4	243.639	2.1151	0.0402
	2	20.1	0.1	416.6	245.977	2.2017	0.0423
	1	0.3	0	416.9	248.314	2.1826	0.0423

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 9

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 46 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 441.6 in.

s: ==========> 9 in. Vs: 431.7866 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
9	ROOF	146.2	1.4	147.6	1056.22	0.1817	0.0032
	8	126.6	1.5	275.7	1066.98	0.3359	0.0060
	7	111.3	1.3	388.3	1077.73	0.4684	0.0085
	6	95.9	1.1	485.3	1088.48	0.5796	0.0107
	5	80.5	0.9	566.7	1099.23	0.6702	0.0125
	4	65.1	0.7	632.5	1109.99	0.7408	0.0139
	3	49.7	0.6	682.8	1120.74	0.7920	0.0150
	2	34.3	0.4	717.5	1131.49	0.8244	0.0158
	1	7.4	0.2	725.1	1142.24	0.8252	0.0160

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19, 1992

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WALL NUMBER 10

Wall height? ====>	11 ft.	f'c:	3000 psi
Wall length? ====>	10 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	96 in.		
s: ==========>	10 in.	Vs:	76.8 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
10	ROOF	67.9	0.3	68.2	185.142	0.4789	0.0086
	8	59.3	0.2	127.7	187.012	0.8877	0.0162
	7	52.1	0.2	180	188.882	1.2389	0.0228
	6	44.9	0.2	225.1	190.752	1.5341	0.0285
	5	37.7	0.2	263	192.622	1.7750	0.0333
	4	30.5	0.1	293.6	194.492	1.9624	0.0372
	3	23.3	0.1	317	196.362	2.0987	0.0402
	2	16.1	0.1	333.2	198.232	2.1851	0.0422
	1	0.2	0	333.4	200.102	2.1660	0.0427

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 11

Wall height? ====>	11 ft.	f'c:	3000 psi
Wall length? ====>	10 ft.	fv:	40 ksi
Thickness? ======>	8 in.	Ec:	3122.018 ksi
Av: ==========>	0.2 sq. in.		
d: ==========>	96 in.		
s: ==========>	10 in.	Vs:	76.8 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
11	ROOF	67.9	0	67.9	185.142	0.4768	0.0086
	8	59.3	0	127.2	187.012	0.8842	0.0161
	7	52.1	0	179.3	188.882	1.2340	0.0227
	6	44.9	0	224.2	190.752	1.5279	0.0284
	5	37.7	0	261.9	192.622	1.7675	0.0332
	4	30.5	0	292.4	194.492	1.9544	0.0371
	3	23.3	0	315.7	196.362	2.0901	0.0400
	2	16.1	0	331.8	198.232	2.1759	0.0421
	1	0.1	0	331.9	200.102	2.1562	0.0421

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 12

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.17 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 59.232 in.

s: ==========> 10 in. Vs: 47.3856 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
12	ROOF	20.9	0.1	21	114.232	0.2390	0.0043
	8	18.3	0.1	39.4	115.386	0.4439	0.0081
	7	16	0.1	55.5	116.540	0.6191	0.0114
	6	13.8	0.1	69.4	117.694	0.7666	0.0142
	5	11.6	0.1	81.1	118.848	0.8871	0.0166
	4	9.4	0.1	90.6	120.001	0.9815	0.0186
	3	7.2	0	97.8	121.155	1.0494	0.0201
	2	4.9	0	102.7	122.309	1.0916	0.0211
	1	0.1	0	102.8	123.463	1.0824	0.0211

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 13

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
13	ROOF	76.9	15	91.9	627.537	0.1904	0.0034
	8	66.6	13	171.5	633.925	0.3517	0.0063
	7	58.5	11.4	241.4	640.314	0.4901	0.0089
	6	50.4	9.8	301.6	646.702	0.6063	0.0112
	5	42.3	8.2	352.1	653.091	0.7009	0.0130
	4	34.2	6.7	393	659.479	0.7747	0.0146
	3	26.1	5.1	424.2	665.867	0.8282	0.0157
	2	18	3.5	445.7	672.256	0.8619	0.0165
	1	3.7	0.3	449.7	678.644	0.8614	0.0167

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 14

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 11.6 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 111.36 in.

s: ==========> 9 in. Vs: 108.8853 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
14	ROOF	117	0	117	266.353	0.5710	0.0102
	8	102.2	0	219.2	269.064	1.0591	0.0191
	7	89.8	0	309	271.776	1.4781	0.0270
	6	77.4	0	386.4	274.487	1.8300	0.0338
	5	64.9	0	451.3	277.199	2.1165	0.0395
	4	52.5	0	503.8	279.910	2.3398	0.0440
	3	40.1	0	543.9	282.622	2.5018	0.0476
	2	27.7	0	571.6	285.333	2.6042	0.0500
	1	0.4	0	572	288.045	2.5815	0.0500

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 15

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 27.33 ft. fv: 40 ksi

Thickness? ======> 10 in. Ec: 3122.018 ksi

Av: ==========> 0.22 sq. in.

d: ==========> 262.368 in.

s: ==========> 9 in. Vs: 256.5376 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
15	ROOF	76.9	13.6	90.5	627.537	0.1875	0.0033
	8	66.6	11.8	168.9	633.925	0.3464	0.0062
	7	58.5	10.3	237.7	640.314	0.4826	0.0088
	6	50.4	8.9	297	646.702	0.5970	0.0110
	5	42.3	7.5	346.8	653.091	0.6903	0.0128
	4	34.2	6	387	659.479	0.7629	0.0143
	3	26.1	4.6	417.7	665.867	0.8155	0.0155
	2	18	3.2	438.9	672.256	0.8487	0.0163
	1	3.7	0.3	442.9	678.644	0.8484	0.0164

PROJECT: GSA - 517 GOLD
JOB NO.: 91062.0
SUBJECT: SHEAR WALL ANALYSIS RUN 2
DATE: FEB. 19. 1992

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WALL NUMBER 16

Wall height? ====> 11 ft. f'c: 3000 psi

Wall length? ====> 6.17 ft. fv: 40 ksi

Thickness? ======> 8 in. Ec: 3122.018 ksi

Av: ==========> 0.2 sq. in.

d: ==========> 59.232 in.

s: ==========> 10 in. Vs: 47.3856 kips

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WALL NO.	LEVEL	AXIAL SHEAR kips	TORSIONAL SHEAR kips	CUM. TOT. SHEAR kips	FACTORED ULT. CAP. kips	FACTORED SHEAR / ULTIMATE CAPACITY	SHEAR DEFL in.
16	ROOF	20.9	0.1	21	114.232	0.2390	0.0043
	8	18.3	0.1	39.4	115.386	0.4439	0.0081
	7	16	0.1	55.5	116.540	0.6191	0.0114
	6	13.8	0.1	69.4	117.694	0.7666	0.0142
	5	11.6	0.1	81.1	118.848	0.8871	0.0166
	4	9.4	0	90.5	120.001	0.9804	0.0186
	3	7.2	0	97.7	121.155	1.0483	0.0200
	2	4.9	0	102.6	122.309	1.0905	0.0211
	1	0.4	0	103	123.463	1.0845	0.0211