



ACCU-TEST ENGINEERING LABORATORIES, INC.

TESTING • INSPECTION • ENGINEERS • RESEARCH

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MEMO / TRANSMITTAL SUBJECT

To:

1. Ms. Cheryl C. Fuerth
Property Development, County of LA
Fax No.: 213-626-7827
Phone No.: 213-974-1127
2. Mr. Bill Gelpi
County of Los Angeles
Fax No.: 626-300-2387
Phone No.: 626-300-3231
3. Mr. Bryan Smith, S.E.
Nabih Youssef & Associates
Fax No.: 213-688-3018
Phone No.: 213-362-0707

Date: July 23, 2004

Page: 1 of 23

From: Satinder Sethce

Regarding: Hall of Justice
Structural Investigations and Materials Testing

Message: Transmitting revised test report for the subject project.
For any questions or clarifications, kindly give us a call.
Thank you for your patronage.

Enclosures:

1. Cover Letter
2. Test Report (21 pages)

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Transmitted By: gu

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January 5, 2004

Ms. Cheryl C. Fuerth, Property Development
Chief Administrative Office
County of Los Angeles
500 West Temple Street, Room 754
Los Angeles, California 90012

Mr. Bryan Smith, S.E.
Nabih Youssef & Associates
800 Wilshire Boulevard, Suite 510
Los Angeles, California 90012

**Subject: LA County Hall of Justice, 211 W. Temple, Los Angeles
Structural Investigations and Materials Testing
Accu-Test Job No. 305421**

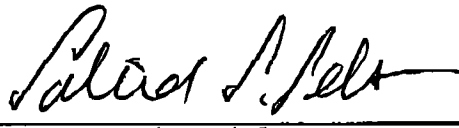
Dear Ms. Fuerth and Mr. Smith:

Enclosed please find the results of in-situ tests conducted recently at the subject building. The test data, including the load applied and the corresponding deformation values, is presented in the attached tables and figures.

As instructed by the EOR, all tests were conducted at the specified locations. Under the direction of one of our qualified staff engineers, the tests were carefully performed in accordance with the given specifications and per the governing local city building code.

We are grateful for this opportunity to render our engineering laboratory services. Should you have any questions, or if we may be of further assistance, please contact this office.

Very Truly,
ACCU-TEST ENGINEERING LABORATORIES, INC.

By: 
Satinder S. Sethee, Ph.D.
Director, Structural Engineering

SS:gu

Enclosure: Test Report



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-1, 1st Floor(#41) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Table 2.1A Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-1, Location #41, 1st Floor, "Mid-North Wall", Interior Wythe

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation Δ L (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress $f_m = K_m \cdot K_a \cdot p$ (psi)
1	0	0.0	0.0	0.00	0.00	0
2	50	2.0	2.0	2.00	0.17	36
3	100	4.5	4.5	4.50	0.39	72
4	150	8.0	7.5	7.75	0.67	108
5	200	11.5	10.5	11.00	0.96	144
6	250	17.0	15.0	16.00	1.39	180
7	300	22.5	20.0	21.25	1.85	216
8	100	14.5	12.5	13.50	1.17	72
9	200	20.5	18.0	19.25	1.67	144
10	300	25.0	21.5	23.25	2.02	216
11	350	30.0	25.5	27.75	2.41	252
12	400	41.5	34.0	37.75	3.28	288
13	100	28.5	22.0	25.25	2.20	72
14	300	38.5	31.0	34.75	3.02	216
15 ^[1]	400	44.0	35.5	39.75	3.46	288
16	450	47.5	38.5	43.00	3.74	324
17	500	54.5	44.0	49.25	4.28	359
18	100	37.0	27.5	32.25	2.80	72
19	300	48.5	38.0	43.25	3.76	216

(Test Data Continued to Next Page)

[1] Noticed beginning of crack(s) in the masonry.

- Note:**
- Gauge length = 11.5 inches. Governing Flatjack Calibration Factor "K_m" = 0.79, the Flatjack Slot Area Factor "K_a" = 0.91, and the Applied Stress "f_m" = 0.72 p.
 - The corresponding Stress-Strain Curves are plotted in Figure 2.1A.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-1, 1st Floor (#41) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Table 2.1B Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-1, Location #41, 1st Floor, "Mid-North Wall", Interior Wythe

(Test Data Continued from Previous Page)

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation ΔL (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
20 ^[2]	500	59.0	47.0	53.00	4.61	359
21	550	65.5	52.5	59.00	5.13	395
22	600	72.5	59.0	65.75	5.72	431
23	100	49.5	38.5	44.00	3.83	72
24	300	62.0	49.5	55.75	4.85	216
25	500	72.5	58.5	65.50	5.70	359
26 ^[3]	600	78.0	64.0	71.00	6.17	431
27	650	86.5	72.5	79.50	6.91	467
28 ^[4]	680	91.5	77.5	84.50	7.35	489
29	100	66.0	53.0	59.50	5.17	72
30	0	51.0	40.0	45.50	3.96	0

[2] Cracks continued to develop

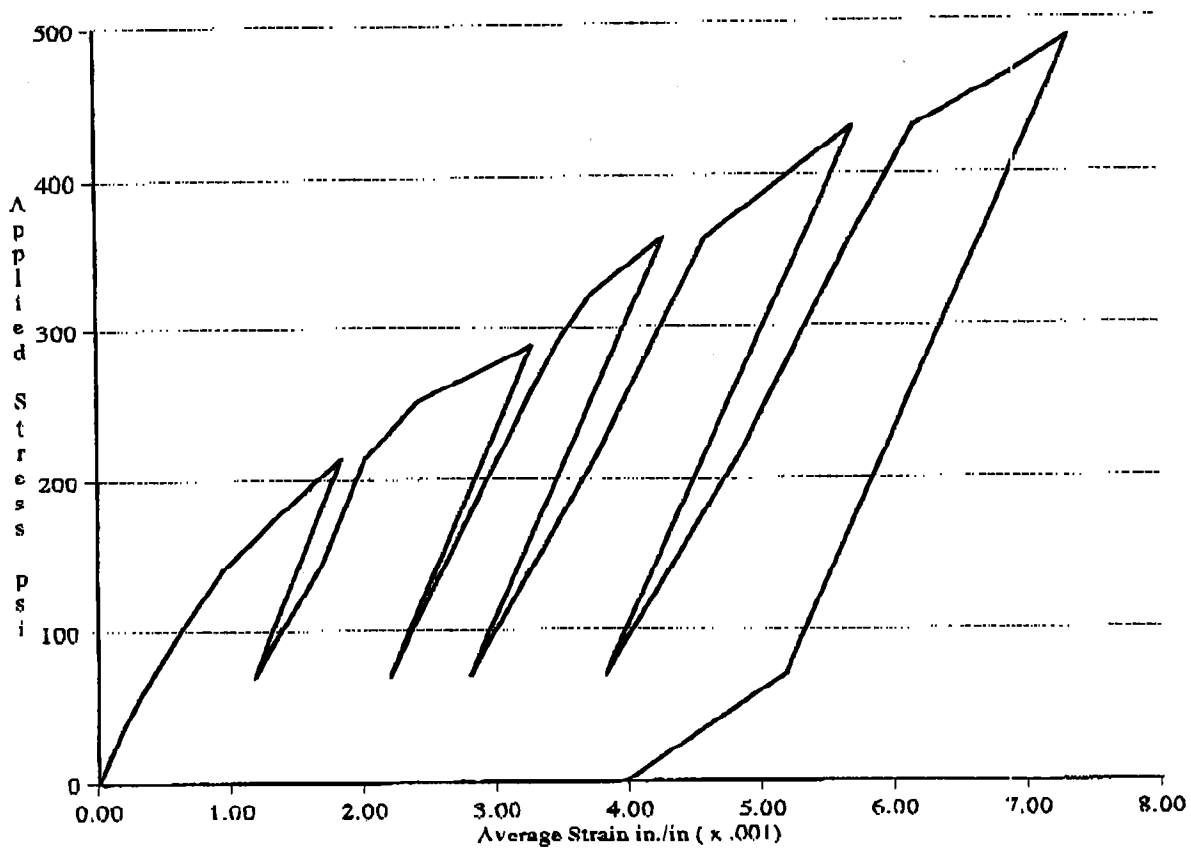
[3] Cracks became longer and wider.

[4] Masonry showed significant deformations, loading was stopped at this level to prevent potential damage to the structure.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-1, 1st Floor(#41) Test Date: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethes, Ph.D.

Figure 2.1A Compression Stress-Strain Curves for Brick Wall
Obtained from In-Situ Flatjack Tests
Test ID: FJ-1, Location #41, 1st Floor
"Mid-North Wall", Interior Wythe



- Note:*
1. The deformability tests were conducted in accordance with the ASTM C1197-91 Specifications.
 2. The recorded numerical test data is presented in the preceding tables.
 3. The test location, as specified by the EOR, is shown on the drawing included in Appendix "A".



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-2, 4th Floor(#39) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Table 2.2A Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
 Test ID: FJ-2, Location #39, 4th Floor, "Mid-North Wall", Interior Wythe

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation Δ L (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
1	0	0.0	0.0	0.00	0.00	0
2	50	2.0	2.5	2.25	0.28	36
3	100	6.0	5.5	5.75	0.72	72
4	150	8.5	8.0	8.25	1.03	108
5	200	13.0	11.5	12.25	1.53	144
6	250	17.0	15.0	16.00	2.00	180
7	300	23.0	20.0	21.50	2.69	216
8	100	15.5	13.5	14.50	1.81	72
9	200	20.5	18.0	19.25	2.41	144
10	300	24.0	21.5	22.75	2.84	216
11	350	26.5	24.0	25.25	3.16	252
12	400	32.0	28.5	30.25	3.78	288
13	100	20.5	17.5	19.00	2.38	72
14	300	30.0	27.0	28.50	3.56	216
15	400	34.0	30.0	32.00	4.00	288
16	450	38.0	33.0	35.50	4.44	324
17	500	45.0	38.0	41.50	5.19	359
18	100	26.5	22.5	24.50	3.06	72
19	300	39.5	33.5	36.50	4.56	216

(Test Data Continued to Next Page)

- Note:**
- Gauge length = 8 inches. Governing Flatjack Calibration Factor "Km" = 0.79, the Flatjack Slot Area Factor "Ka" = 0.91, and the Applied Stress "fm" = 0.72 p.
 - The corresponding Stress-Strain Curves are plotted in Figure 2.2A.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-2, 4th Floor(#39) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/rn	Checked By: S. Sethes, Ph.D.

Table 2.2B Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
 Test ID: FJ-2, Location #39, 4th Floor, "Mid-North Wall", Interior Wythe

(Test Data Continued from Previous Page)

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation ΔL (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
20	500	47.0	40.0	43.50	5.44	359
21	550	50.5	42.5	46.50	5.81	395
22 ^[1]	600	58.0	48.5	53.25	6.66	431
23	100	37.5	31.0	34.25	4.28	72
24	300	48.5	40.3	44.50	5.56	216
25	500	56.5	47.5	52.00	6.50	359
26	600	60.5	50.5	55.50	6.94	431
27	650	63.5	53.5	58.50	7.31	467
28 ^[2]	700	68.5	58.0	63.25	7.91	503
29	750	71.5	61.0	66.25	8.28	539
30 ^[3]	800	77.5	66.5	72.00	9.00	575
31	100	50.5	45.5	48.00	6.00	72
32	0	38.0	33.0	35.50	4.44	0

[1] Noticed beginning of crack(s) in the masonry.

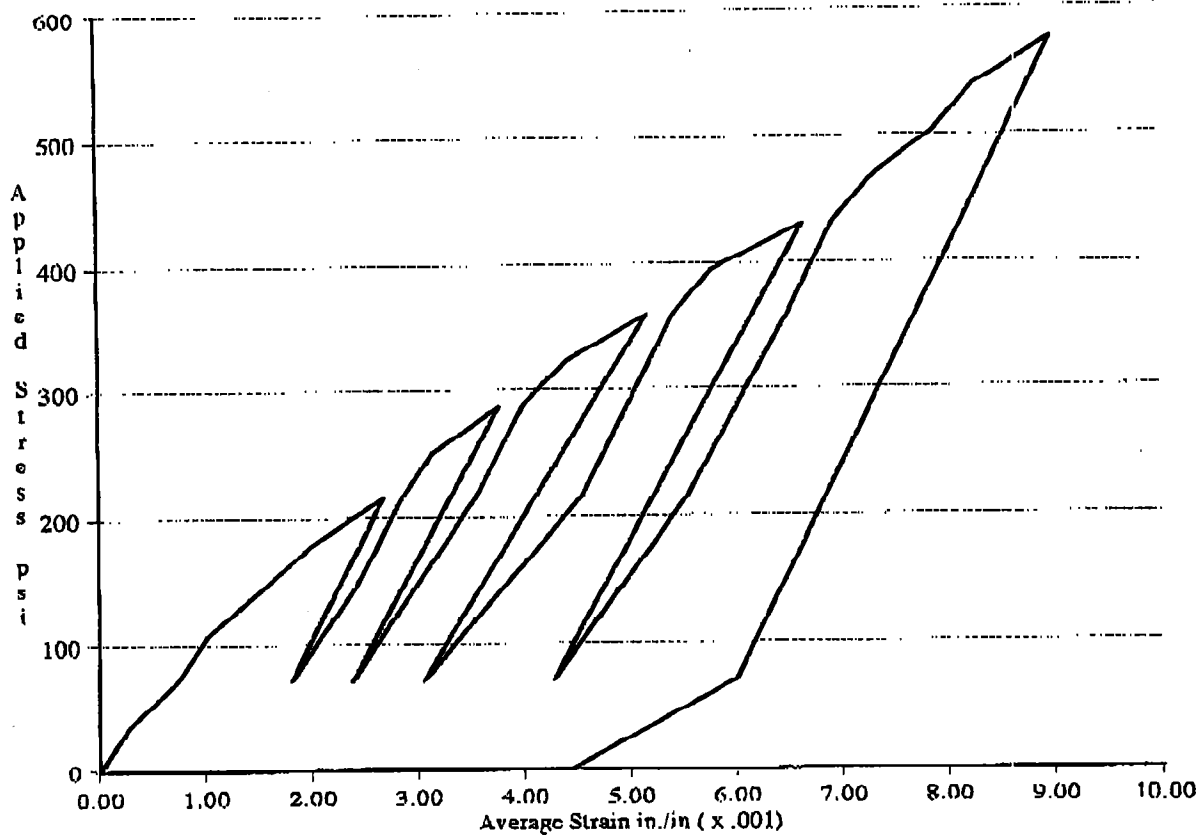
[2] Crack(s) became longer and wider.

[3] Masonry showed significant deformations, loading was stopped at this level to prevent potential damage to the structure.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-2, 4th Floor (#39) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethce, Ph.D.

**Figure 2.2A Compression Stress-Strain Curves for Brick Wall
Obtained from In-Situ Flatjack Tests
Test ID: FJ-2, Location #39, 4th Floor "Mid-North Wall",
Interior Wythe**



- Note:*
1. The deformability tests were conducted in accordance with the ASTM C1197-91 Specifications.
 2. The recorded numerical test data is presented in the preceding tables.
 3. The test location, as specified by the EOR, is shown on the drawing included in Appendix "A".



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-3, 6th Floor (#38) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethce, Ph.D.

Table 2.3A Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
 Test ID: FJ-3, Location #38, 6th Floor, "Mid-Wall", Interior Wythe

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation Δ L (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
1	0	0.0	0.0	0.00	0.00	0
2	50	0.0	0.0	0.00	0.00	36
3	100	1.5	2.0	1.75	0.22	72
4	200	5.0	5.0	5.00	0.62	144
5	250	8.0	7.0	7.50	0.94	180
6	300	11.0	9.5	10.25	1.28	216
7	100	7.5	6.5	7.00	0.88	72
8	200	9.5	8.5	9.00	1.12	144
9	300	12.5	11.0	11.75	1.47	216
10 ^[1]	350	15.5	13.5	14.50	1.81	252
11	400	18.0	15.5	16.75	2.09	288
12	100	11.0	9.5	10.25	1.28	72
13	300	16.5	14.5	15.50	1.94	216
14	400	20.0	17.5	18.75	2.34	288
15	450	23.0	20.0	21.50	2.69	324
16	500	26.5	23.5	25.00	3.12	359
17	100	15.0	13.5	14.25	1.78	72
18	300	22.0	19.5	20.75	2.59	216
19	500	28.0	25.0	26.50	3.31	359

(Test Data Continued to Next Page)

[1] Noticed beginning of cracks in the masonry.

- Note:*
- Gauge length = 8.0 inches. Governing Flatjack Calibration Factor "Km" = 0.79, the Flatjack Slot Area Factor "Ka" = 0.91, and the Applied Stress "fm" = 0.72 p.
 - The corresponding Stress-Strain Curves are plotted in Figure 2.3A.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-3, 6th Floor (#38) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethce, Ph.D.

Table 2.3B Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-3, Location #38, 6th Floor, "Mid-Wall", Interior Wythe

(Test Data Continued from Previous Page)

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation ΔL (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress (m=Km.Ka.p) (psi)
20 ^[2]	550	31.0	27.0	29.00	3.62	395
21	600	34.0	29.5	31.75	3.97	431
22	100	19.0	16.5	17.75	2.22	72
23	300	27.0	23.5	25.25	3.16	216
24	500	32.5	28.5	30.50	3.81	359
25	600	35.0	31.0	33.00	4.12	431
26 ^[3]	650	37.5	32.5	35.00	4.38	467
27	700	40.0	34.5	37.25	4.66	503
28	100	22.0	19.0	20.50	2.56	72
29	300	30.0	25.5	27.75	3.47	216
30	500	36.5	31.0	33.75	4.22	359
31	700	41.5	35.0	38.25	4.78	503
32 ^[4]	750	38.0	33.5	35.75	4.47	539
33 ^[5]	800	34.0	31.0	32.50	4.06	575

[2] Additional cracks developed going away from the flatjack corners.

[3] Cracks became longer and wider.

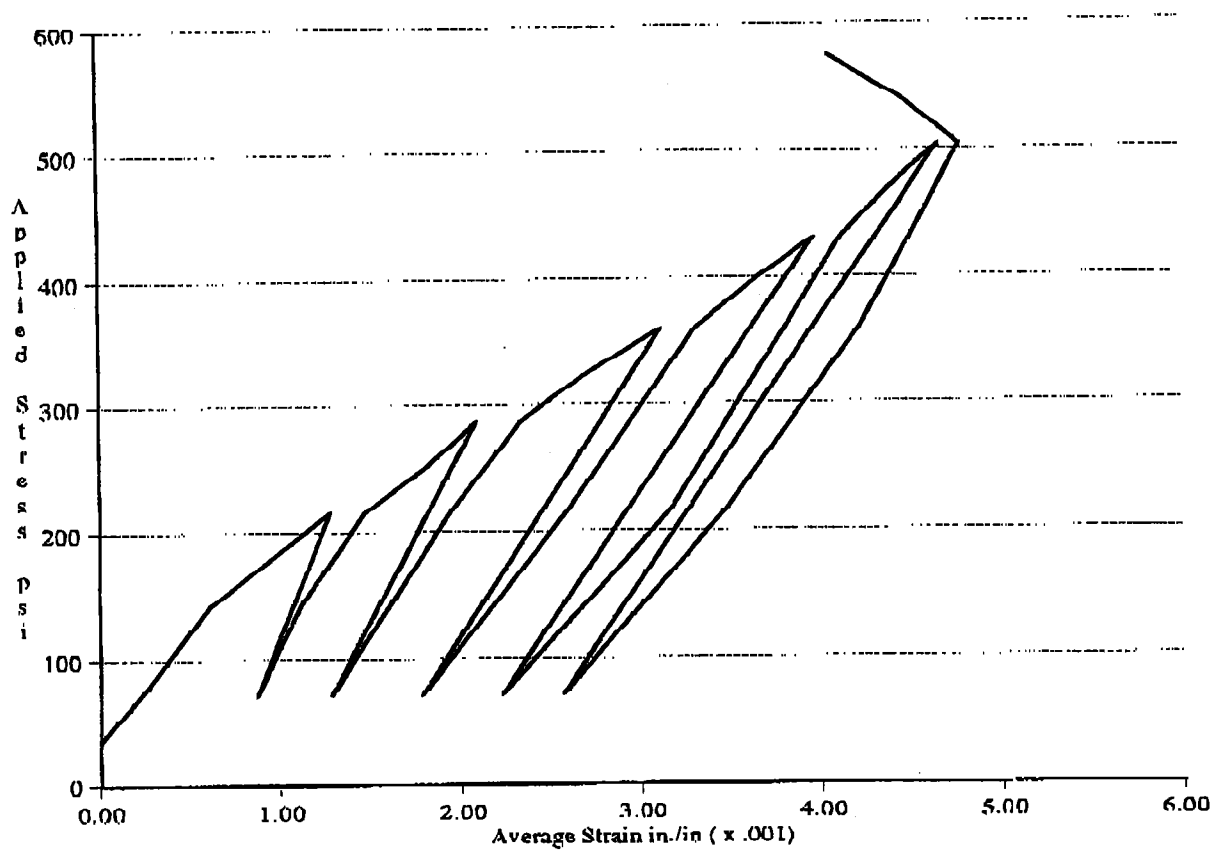
[4] In spite of increased compressive load, the deformations began to decrease. This exceptional strain reversal may have been due to crushing of mortar and/or brick in the rear part of the test wythe.

[5] Masonry showed significant deformations, loading was stopped at this level to prevent potential damage to the structure.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-3, 6th Floor (#38) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethce, Ph.D.

Figure 2.3A Compression Stress-Strain Curves for Brick Wall
Obtained from In-Situ Flatjack Tests
Test ID: FJ-3, Location #38, 6h Floor, "Mid-Wall", Interior
Wythe



- Note:*
1. The deformability tests were conducted in accordance with the ASTM C1197-91 Specifications.
 2. The recorded numerical test data is presented in the preceding tables.
 3. The test location, as specified by the EOR, is shown on the drawing included in Appendix "A".



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-4, 10th Floor (#35) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Table 2.4A Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
 Test ID: FJ-4, Location #35, 10th Floor, "South Light Court", Interior Wythe

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation Δ L (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
1	0	0.0	0.0	0.00	0.00	0
2	50	1.0	0.5	0.75	0.09	36
3	100	3.5	2.0	2.75	0.34	72
4	200	9.5	6.5	8.00	1.00	144
5	250	12.5	9.0	10.75	1.34	180
6	300	16.5	12.0	14.25	1.78	216
7	100	11.5	7.5	9.50	1.19	72
8	200	14.5	10.0	12.25	1.53	144
9	300	17.5	12.5	15.00	1.88	216
10	350	20.5	15.0	17.75	2.22	252
11 ^[1]	400	22.0	17.5	19.75	2.47	288
12	100	13.5	11.0	12.25	1.53	72
13	300	20.0	16.0	18.00	2.25	216
14	400	22.5	18.0	20.25	2.53	288
15	450	25.0	20.0	22.50	2.81	324
16 ^[2]	500	27.5	21.5	24.50	3.06	359
17	100	17.5	12.5	15.00	1.88	72
18	300	23.5	17.5	20.50	2.56	216
19	500	28.5	22.0	25.25	3.16	359
20	550	30.5	24.5	27.50	3.44	395

(Test Data Continued to Next Page)

- [1] Noticed beginning of cracks in the masonry.
- [2] Additional cracks developed.

Note: 1. Gauge length = 8 inches. Governing Flatjack Calibration Factor "Km" = 0.79, the Flatjack Slot Area Factor "Ka" = 0.91, and the Applied Stress "fm" = 0.72 p.
 2. The corresponding Stress-Strain Curves are plotted in Figure 2.4A.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-4, 10th Floor (#35) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/rn	Checked By: S. Schee, Ph.D.

Table 2.4B Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
 Test ID: FJ-4, Location #35, 10th Floor, "South Light Court", Interior Wythe

(Test Data Continued from Previous Page)

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation ΔL (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
21 ^[3]	600	34.0	26.5	30.25	3.78	431
22	100	24.0	16.0	20.00	2.50	72
23	300	27.5	21.0	24.25	3.03	216
24	500	32.5	26.0	29.25	3.66	359
25	600	35.0	30.5	32.75	4.09	431
26 ^[4]	650	46.5	44.5	45.50	5.69	467
27	100	37.5	30.0	33.75	4.22	72
28	0	30.0	28.0	29.00	3.62	0

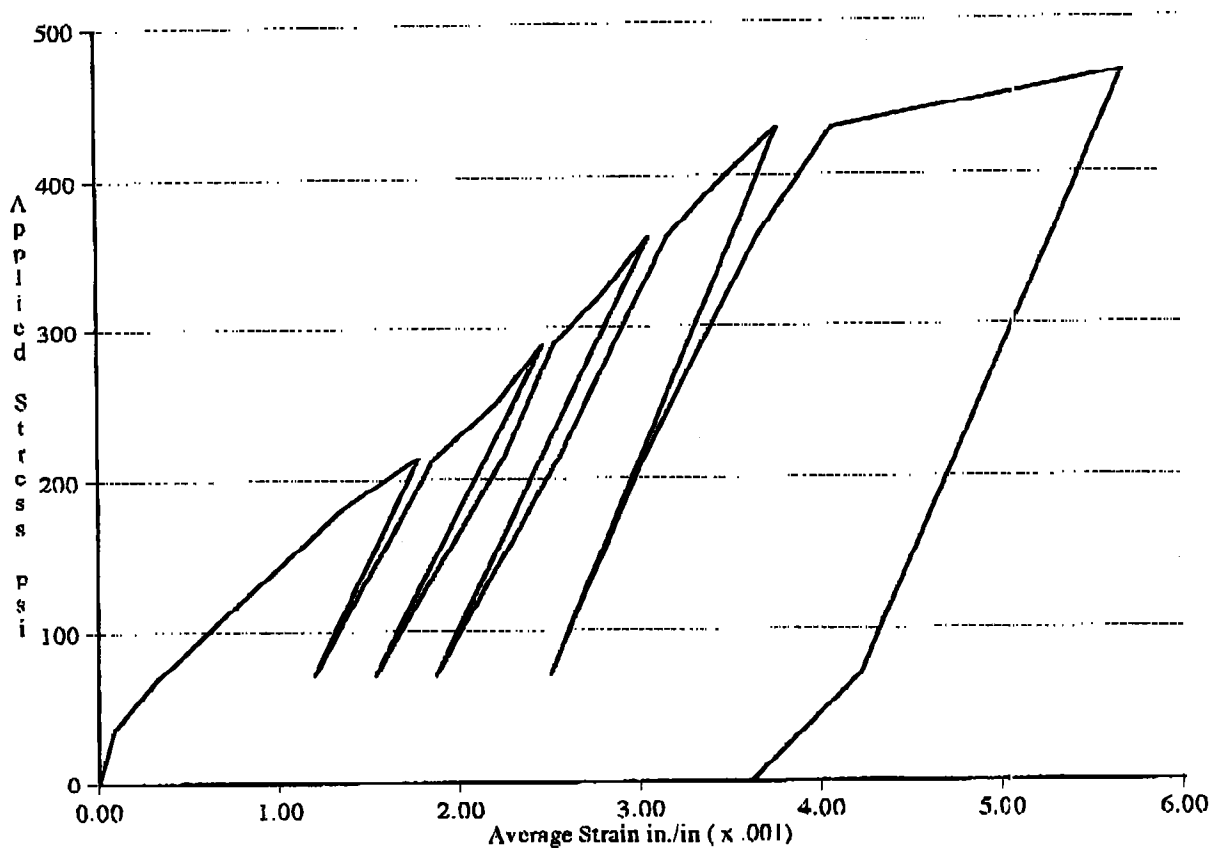
[3] Cracks became longer and wider.

[4] Masonry showed significant deformations, loading was stopped at this level to prevent potential damage to the structure.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-4, 10th Floor (#35) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Figure 2.4A Compression Stress-Strain Curves for Brick Wall Obtained from In-Situ Flatjack Tests
Test ID: FJ-4, Location #35, 10th Floor "South Light Court" Interior Wythe



- Note:*
1. The deformability tests were conducted in accordance with the ASTM C1197-91 Specifications.
 2. The recorded numerical test data is presented in the preceding tables.
 3. The test location, as specified by the EOR, is shown on the drawing included in Appendix "A".



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-5, 10th Floor (#36) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/rm	Checked By: S. Sethee, Ph.D.

Table 2.5A Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-5, Location #36, 10th Floor, "North Light Court", Interior Wythe

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation Δ L (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
1	0	0.0	0.0	0.00	0.00	0
2	50	1.5	1.0	1.25	0.17	36
3	100	5.0	2.5	3.75	0.50	72
4	200	16.0	10.5	13.25	1.77	144
5	250	22.0	15.0	18.50	2.47	180
6	300	28.0	19.5	23.75	3.17	216
7	100	21.0	13.5	17.25	2.30	72
8	200	26.5	18.0	22.25	2.97	144
9	300	34.0	23.0	28.50	3.80	216
10	350	42.0	29.5	35.75	4.77	252
11	400	50.0	35.5	42.75	5.70	288
12	100	35.5	23.0	29.25	3.90	72
13	300	47.0	33.0	40.00	5.33	216
14	400	53.5	37.5	45.50	6.07	288
15 ^[1]	450	61.0	43.5	52.25	6.97	324
16 ^[2]	500	68.0	49.0	58.50	7.80	359

(Test Data Continued to Next Page)

[1] Noticed beginning of cracks in the masonry.

[2] Cracks continued to develop.

Note: 1. Gauge length = 7.5 inches. Governing Flatjack Calibration Factor "Km" = 0.79, the Flatjack Slot Area Factor "Ka" = 0.91, and the Applied Stress "fm" = 0.72 p.
2. The corresponding Stress-Strain Curves are plotted in Figure 2.5A.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-5, 10th Floor (#36) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Table 2.5B Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-5, Location #36, 10th Floor, "North Light Court", Interior Wythe

(Test Data Continued from Previous Page)

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" $\Delta 1$ (in x .001)	Deformation Dial "G3" $\Delta 2$ (in x .001)	Average Deformation ΔL (in x .001)	Average Strain $\Delta L / \text{Gauge Length}$ (in./in. x .001)	Applied Stress $f_m = K_m \cdot K_a \cdot p$ (psi)
17	100	49.0	33.0	41.00	5.47	72
18	300	60.5	43.0	51.75	6.90	216
19	500	71.0	51.0	61.00	8.13	359
20 ^[3]	550	76.5	56.0	66.25	8.83	395
21 ^[4]	600	92.5	64.5	78.50	10.47	431
22	100	81.0	56.0	68.50	9.13	72
23	0	59.0	36.0	47.50	6.33	0

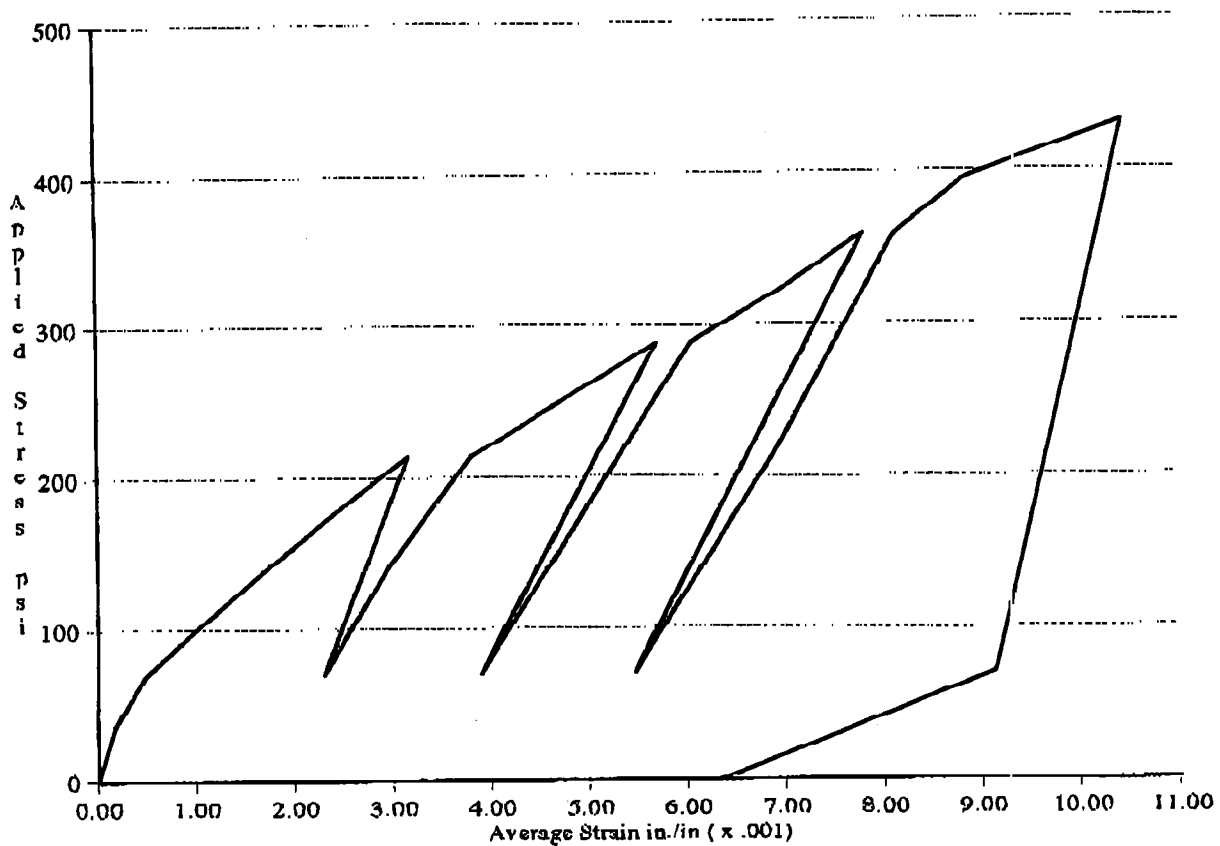
[3] Cracks became longer and wider.

[4] Masonry showed significant deformations, loading was stopped at this level to prevent potential damage to the structure.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall of Justice, 211 W. Temple Street, Los Angeles, California	Test ID: FJ-5, 10th Floor (#36) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Figure 2.5A Compression Stress-Strain Curves for Brick Wall
 Obtained from In-Situ Flatjack Tests
 Test ID: FJ-5, Location #36, 10th Floor "North Light Court",
 Interior Wythe



- Note:* 1. The deformability tests were conducted in accordance with the ASTM C1197-91 Specifications.
 2. The recorded numerical test data is presented in the preceding tables.
 3. The test location, as specified by the EOR, is shown on the drawing included in Appendix "A".



Subject: Modulus of Elasticity Tests on Masonry Walls Hall Of Justice, 211 W. Temple, Los Angeles, California	Test ID: FJ-6, 14th Floor (#33) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Table 2.6A Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
 Test ID: FJ-6, Location #33, 14th Floor, "South Light Court", Interior Wythe

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Average of "G1 & G2" Δ 1 (in x .001)	Deformation Average of "G3 & G4" Δ 2 (in x .001)	Average Deformation Δ L (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
1	0	0.0	0.0	0.00	0.00	0
2	50	0.0	0.0	0.00	0.00	36
3	100	1.0	1.0	1.00	0.13	72
4	200	2.5	3.0	2.75	0.37	144
5	250	3.5	3.5	3.50	0.47	180
6	300	4.0	4.5	4.25	0.57	216
7	100	2.5	2.5	2.50	0.33	72
8	200	3.5	3.5	3.50	0.47	144
9	300	4.5	4.5	4.50	0.60	216
10	350	5.0	5.0	5.00	0.67	252
11	400	7.0	6.0	6.50	0.87	288
12	100	4.2	3.5	3.88	0.52	72
13	300	6.5	5.5	6.00	0.80	216
14	400	7.5	6.5	7.00	0.93	288
15 ^[1]	450	8.0	7.0	7.50	1.00	324
16	500	9.5	8.0	8.75	1.17	359
17	100	5.5	5.0	5.25	0.70	72
18	300	7.5	6.5	7.00	0.93	216
19	500	9.5	9.0	9.25	1.23	359

(Test Data Continued to Next Page)

(1) Noticed beginning of cracks in the masonry.

Note: 1. Gauge length = 7.5 inches. Governing Flatjack Calibration Factor "Km" = 0.79, the Flatjack Slot Area Factor "Ka" = 0.91, and the Applied Stress "fm" = 0.72 p.
 2. The corresponding Stress-Strain Curves are plotted in Figure 2.6A.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall Of Justice, 211 W. Temple, Los Angeles, California	Test ID: FJ-6, 14th Floor (#33) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

Table 2.6B Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-6, Location #33, 14th Floor, "South Light Court", Interior Wythe

(Test Data Continued from Previous Page)

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Average of "G1 & G2" Δ 1 (in x .001)	Deformation Average of "G3 & G4" Δ 2 (in x .001)	Average Deformation ΔL (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress fm=Km.Ka.p (psi)
20 ^[2]	550	10.5	10.0	10.25	1.37	395
21 ^[3]	600	12.0	12.0	12.00	1.60	431
22 ^[4]	650	14.0	13.5	13.75	1.83	467
23	700	16.0	15.0	15.50	2.07	503
24	100	9.5	7.5	8.50	1.13	72
25	0	7.5	5.0	6.25	0.83	0

[2] Cracks continued to develop

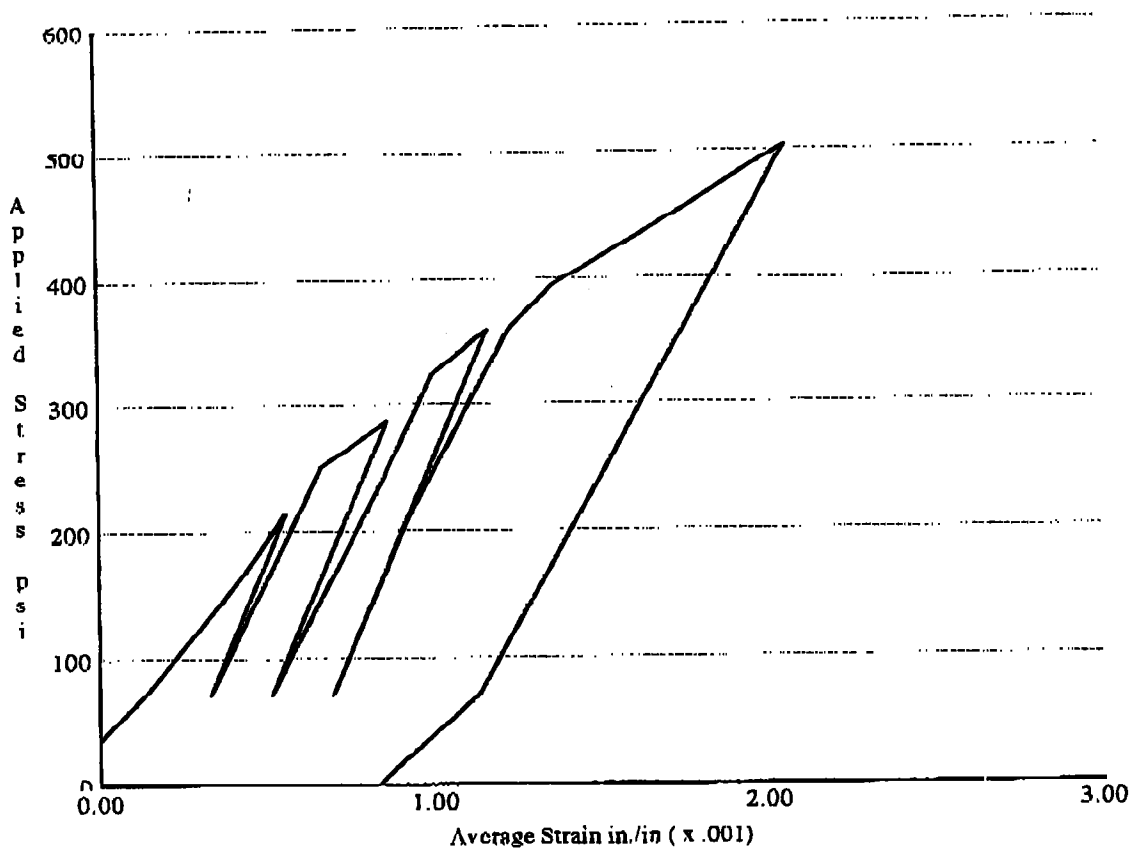
[3] Cracks became longer and wider.

[4] Masonry showed significant deformations, loading was stopped at this level to prevent potential damage to the structure.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall Of Justice, 211 W. Temple, Los Angeles, California	Test ID: FJ-6, 14th Floor (#33) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m	Checked By: S. Sethee, Ph.D.

**Figure 2.6A Compression Stress-Strain Curves for Brick Wall
Obtained from In-Situ Flatjack Tests
Test ID: FJ-6, Location #33, 14th Floor, "South Light Court",
Interior Wythe**



- Note:*
1. The deformability tests were conducted in accordance with the ASTM C1157-91 Specifications.
 2. The recorded numerical test data is presented in the preceding tables.
 3. The test location, as specified by the EOR, is shown on the drawing included in Appendix "A".



Subject: Modulus of Elasticity Tests on Masonry Walls Hall Of Justice, 211 W. Temple, Los Angeles, California	Test ID: FJ-7, 14th Floor (#34) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/m Checked By: S. Sethec, Ph.D.	

Table 2.7A Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-7, Location #34, 14th Floor, "North Light Court", Interior Wythe

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" Δ 1 (in x .001)	Deformation Dial "G3" Δ 2 (in x .001)	Average Deformation Δ L (in x .001)	Average Strain ΔL/Gauge Length (in./in. x .001)	Applied Stress $f_m = K_m \cdot K_a \cdot p$ (psi)
1	0	0.0	0.0	0.00	0.00	0
2	50	1.0	1.0	1.00	0.10	36
3	100	3.0	3.0	3.00	0.29	72
4	200	7.5	8.5	8.00	0.76	144
5	250	9.0	10.5	9.75	0.93	180
6	300	10.5	13.0	11.75	1.12	216
7	100	6.0	8.0	7.00	0.67	72
8	200	8.5	11.5	10.00	0.95	144
9	300	11.0	13.5	12.25	1.17	216
10	350	12.0	14.5	13.25	1.26	252
11	400	12.5	16.5	14.50	1.38	288
12	100	7.0	7.5	7.25	0.69	72
13	300	11.5	14.0	12.75	1.21	216
14	400	13.0	17.5	15.25	1.45	288
15	450	14.0	20.0	17.00	1.62	324
16 ^[1]	500	15.0	23.5	19.25	1.83	359
17	100	9.0	12.5	10.75	1.02	72
18	300	12.0	19.0	15.50	1.48	216
19	500	16.0	26.0	21.00	2.00	359
20	550	16.5	29.5	23.00	2.19	395

(Test Data Continued to Next Page)

[1] Noticed beginning of cracks in the masonry.

- Note:*
1. Gauge length = 10.5 inches. Governing Flatjack Calibration Factor "K_m" = 0.79, the Flatjack Slot Area Factor "K_a" = 0.91, and the Applied Stress "f_m" = 0.72 p.
 2. The corresponding Stress-Strain Curves are plotted in Figure 2.7A.



Subject: Modulus of Elasticity Tests on Masonry Walls Hall Of Justice, 211 W. Temple, Los Angeles, California	Test ID: FJ-7, 14th Floor (#34) Test Dates: 6/24 - 7/10/03
Report By: V Jain/WK/AA/rn	Checked By: S. Sethee, Ph.D.

Table 2.7B Results of In-Situ Modulus of Elasticity (E) Tests on Brick Wall Using Flatjacks
Test ID: FJ-7, Location #34, 14th Floor, "North Light Court", Interior Wythe

(Test Data Continued from Previous Page)

Load Step No.	Flatjack Pressure "p" (psi)	Deformation Dial "G2" $\Delta 1$ (in x .001)	Deformation Dial "G3" $\Delta 2$ (in x .001)	Average Deformation ΔL (in x .001)	Average Strain $\Delta L/\text{Gauge Length}$ (in./in. x .001)	Applied Stress $f_m = K_m \cdot K_a \cdot p$ (psi)
21 ^[2]	600	17.0	32.0	24.50	2.33	431
22	100	9.5	18.0	13.75	1.31	72
23	300	12.5	25.5	19.00	1.81	216
24	500	16.5	31.5	24.00	2.29	359
25	600	17.5	35.5	26.50	2.52	431
26 ^[3]	650	18.0	41.5	29.75	2.83	467
27 ^[4]	700	31.5	48.5	40.00	3.81	503
28	100	25.0	44.0	34.50	3.29	72
29	0	2.0	34.0	18.00	1.71	0

[2] Cracks continued to develop.

[3] Cracks became long and wide.

[4] Masonry showed significant deformations, loading was stopped at this level to prevent potential damage to the structure.