

POWER AUTHORITY OF THE STATE OF NEW YORK

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November 20, 1980
IPN-80-109

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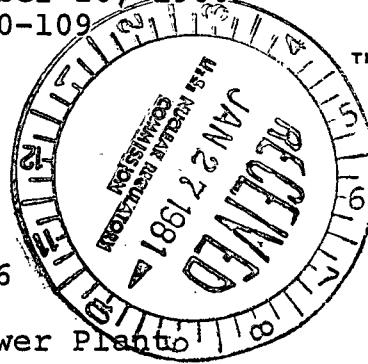
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Mr. Boyce H. Grier, Director
Office of Inspection & Enforcement
Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, Pennsylvania 19406



Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
180 Day Response to I. E. Bulletin No. 80-11

566 ROT

Dear Sir:

The purpose of this letter is to transmit the 180 day, item 2.b report required by I. E. Bulletin No. 80-11, "Masonry Wall Design," in accordance with our November 7, 1980 letter (IPN-80-103).

The enclosed report includes a summary which addresses each of the paragraph 2.b Bulletin requirements.

Very truly yours,

J. E. Bayne
Senior Vice President
Nuclear Generation

cc: Mr. T. Rebelowski
Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 38
Buchanan, New York 10511

NRC Office of Inspection & Enforcement
Division of Reactor Operations Inspection
Washington, D. C. 20555

Subscribed and sworn to before
me this 20 day of November 1980.

Notary Public

RUTH G. ZAPP
Notary Public, State of New York
No. 30-4663423

Qualified in Nassau County
Commission Expires March 30, 1982

810 204 015A

DOCKET NO. 50-286

(INDIAN PT #3

180 day response to IE Bulletin 80-11
masonry wall report

Ltr dtd 11/20/80acc.#8102040159

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50-286

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I.E. BULLETIN NO. 80-11

MASONRY WALL REPORT

POWER AUTHORITY OF THE STATE OF NEW YORK
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
NOVEMBER 19 , 1980

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Assumptions
Material Properties
Criteria
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Location Drawings/Wall Element Numbers
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SUMMARY

A total of twenty-six (26) wall elements have been identified as "Safety-Related", such that their failure could affect a safety-related system. Re-evaluation calculations indicated that eighteen (18) of these wall elements had actual stresses less than the allowable stresses established in the criteria and therefore, do not require modification. The remaining eight (8) wall elements had actual stresses greater than allowable stresses, however, when checked against operability requirements, each was found to maintain its structural integrity. Therefore, the operability of no safety-related system is in jeopardy. Modifications for the latter eight (8) wall elements have been designed and are currently being reviewed and implemented. The Nos. of these wall elements are: 46, 52B, 52C, 55A, 55B, 56B, 57A and 57B.

Responses to each paragraph of Section 2.b. of Bulletin 80-11 follow:

- (i) - The function, type and strengths of the materials of each of the twenty-six (26) safety-related walls are shown on the attached wall data sheets. The systems and equipment, both safety and non-safety related, which are attached to or in proximity of these walls, are described on the equipment lists attached to the wall data sheets. The configuration of these wall elements is shown on the attached drawings which were prepared for each wall system (connected wall elements). The drawings include details, notes and sections showing the horizontal or vertical reinforcement required by the design drawings at the masonry bed joints and the joints between the concrete or steel structure and the masonry.
- (ii) - Construction practices utilized in the laying up of the walls were those normally accepted for masonry work at the time the plant was constructed. Limited inspection documentation is available, however, daily inspection records were not found. The walls that were investigated in this response were non-reinforced, hence the problem of voids in the grout, lack of bond or rebar lapping does not exist. A visual check was made of all the masonry walls to verify the adequacy of the mortar joints as part of the Bulletin efforts. The reanalysis of the masonry walls indicated that those walls which require no fixes have stresses much lower than allowable so that a reduction in allowable stresses due to workmanship could be accommodated.
- (iii) - The acceptance criteria for the review of existing masonry walls was based on: 1) An evaluation of existing masonry codes as to their applicability for the plant's conditions, 2) A literature survey of available data on masonry construction to evaluate the inherent margins of safety for the various loads, and 3) Engineering judgement in applying or interpreting the information available. The codes that were consulted are included in the References below. The allowable stresses for Table 2 (column S) loading used in this acceptance criteria follow, very closely, the recommendations given in ACI Standard 531-79, for inspected construction. The allowable stresses in

Table 2 (column S) are to be used with load combinations that include an OBE earthquake load. Unlike the ACI code which permits a 33-1/3 percent increase in allowable stresses for earthquake loads, no such increase is permitted here with OBE. In addition to OBE, an SSE or safe shutdown earthquake must be considered. An SSE load is an extreme environmental load which is credible but highly improbable. The ACI code does not specifically address this type of loading. Accordingly, a review was conducted of the references below to see what margins of safety are available in the code allowable stress values and to see what kind of stress increases are permissible for the SSE load condition such that an adequate margin of safety is assured. Table 2 (column U) shows the allowable stresses for the SSE load conditions.

References:

1. ACI Standard, "Building Code Requirements for Concrete Masonry Structure," (ACI 531-79).
2. Commentary on "Building Code Requirements for Concrete Masonry Structures", (ACI 531R-79).
3. "Specification for the Design and Construction of Load-Bearing Concrete Masonry" NCMA-1979.
4. Uniform Building Code, Chapter 24, "Masonry" - 1979.
5. Applied Technology Council, "Tentative Provisions for the Development of Seismic Regulations for Buildings" NBS SP-510, Chapters 12 and 12A.
6. Research data and discussion relating to "Specification for Design and Construction of Load Bearing Masonry," NCMA 1970.
7. Copeland and Saxer, "Tests of Structural Bond of Masonry Mortars to Concrete Block," Journal of the Structural Division, November 1964.

(iii)(a) - The following loads were considered in the masonry wall re-evaluation: dead, seismic (OBE and SSE), pressure, missile, impact, wind, tornado and attachment loads. A site survey and a review of system arrangement plans were made to determine which of the above loads are applicable for each wall. Since the working stress method was used to determine the wall stresses, no load factors were applied. The load combinations were the same as described in the FSAR. In a majority of the walls the only loads acting are dead weight and seismic.

The masonry walls used on this plant are typically partitions or infilled panels. Attachments to the walls, if present, are usually very small (less than 100#). They were considered insignificant. Differential floor displacements due to gravity loads are not considered to be important because the masonry walls were constructed after the overall structure experienced its dead load deflections. Differential displacements due to in-plane seismic loading are still being evaluated to enable subsequent investigation of their

effects (if any) on the walls. The masonry walls for this plant do not act as shear walls. They undergo the displacements because of the overall behavior of the structure. Therefore, in-plane loads are considered to be strain-limited.

These walls are unreinforced and, therefore, no cracking is permitted for working loads. They are analyzed as uncracked sections and the stresses are calculated assuming linear elastic theory.

To account for out-of-plane behavior for infilled panels, an effort was made to apply the results of some of the recent research efforts in the related areas of reinforced concrete infilled panels. Since the panels do not take any significant amount of the story shear the integrity of the wall can be assured if significant cracking in the central portions of the wall can be prevented.

References:

1. Fishburn, C. C. "Effect of Mortar Properties on Strength of Masonry" National Bureau of Standards Monograph 36 U.S. Government Printing Office, Nov. 1961.
2. Klingner, R. E. and V. V. Bertero, "Earthquake Resistance of Infilled Frames," Journal of the Structural Division, ASCE, June, 1978.
3. Mayes, R. L., Clough, R. W., et al., "Cyclic Loading Tests of Masonry Piers" 3 Volumes; EERC 76/8, 76/28, 79/12 Earthquake Engineering Research Center, College of Engineering University of California, Berkeley, CA.

(iii)(b) - Any equipment attached to the wall is extremely light. It is secured to the walls by anchor bolts. The loads in these anchors are on the order of 60# or less. These are not considered significant and the potential for block pullout is negligible.

Composite behavior or multi-wythe walls was assumed if the collar joint was filled with mortar. Since the attachment loads, if present, were negligible, the major out-of-plane loads were caused by inertia due to seismic excitation. The shear through the collar joint was calculated using conventional beam theory. The calculated horizontal shear stresses were usually on the order of 1 psi.

ASSUMPTIONS

The assumptions, with regard to the properties of the materials used in the construction of the masonry wall elements at Indian Point 3 Nuclear Power are based on the references listed below.

A) "Specification for Masonry Work" - Dated 6/6/68

Addendum No. 1	Dated 11/26/68
Addendum No. 2	Dated 4/11/69
Addendum No. 3	Dated 11/9/70
Addendum No. 4	Dated 3/9/72

B) Quality Control Inspection Report - Dated 5/13/70

C) Pittsburgh Testing Laboratory Report - Dated 4/23/70

Based on the above specification, addenda, reports and the tables from ACI-531, the values shown on the following sheet were established for use in this re-evaluation.

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S

INR3

SUBJECT

MASONRY WALLS

MATERIAL PROPERTIES

CALC. SET NO.		REV	COMP. BY	CHK'D BY
PRELIM.		0	J. KATZ	HRP
FINAL			DATE 8-1-80	DATE 9-4-80
VOID				
SHEET	OF	1	J. KATZ	ΔIP
J.O.	6604-210		DATE 11-14-80	DATE 11-15-80

HOLLOW BLOCK

ASTM STD C-90

GRADE N

COMPRESSIVE STRENGTH = 1000 ψ

UNIT WEIGHT 8" WYTHE 55.5 #/SF

4" WYTHE 40.5 #/SF

MORTAR TYPE N

 $m_o = 750 \psi$ COMP. STR. MASONRY $f'_m = 700 \psi$ $E = 1000 f'_m = 1000 (700) = .7 (10)^6 \psi$ MODULUS OF RUPTURE = 64 ψ SOLID BLOCK

ASTM STD C-145

GRADE NI

COMPRESSIVE STRENGTH = 2500 ψ

UNIT WEIGHT 150 #/CF

MORTAR TYPE N

 $m_o = 750 \psi$ COMP. STR. MASONRY $f'_m = 1100 \psi$ $E = 1000 f'_m = 1000 (1100) = 1.1 (10)^6 \psi$ MODULUS OF RUPTURE = 108 ψ

SPECIFIED

ASSUMED

ASSUMED

P.C.A.

P.C.A.

ASSUMED

ACI-531

ACI-531

ACI-531

NCMA TESTS

ASSUMED

ASSUMED

P.T.L. REPORT

SPECIFIED

ASSUMED

ACI-531

ACI-531

ACI-531

INTERPOLATED FROM
TYPE "M" & "S" MORTAR

MASONRY WALL RE-EVALUATION

ACCEPTANCE CRITERIA

October 29, 1980

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Masonry Wall Re-evaluation Acceptance Criteria

1. General

1.1 Purpose

This document provides the analysis and design requirements to be used in re-evaluation of masonry walls, as required by the NRC I&E Bulletin 80-11 dated May 8, 1980. The walls will be considered acceptable if the stresses are less than or equal to the allowable stresses listed in Tables 1 and 2 of this document.

1.2 Scope

This re-evaluation is specifically addressed to the masonry walls that are in proximity to or have attachments from safety-related piping or equipment. Both reinforced and non-reinforced masonry walls are considered.

Since no masonry walls are used as shear or load bearing walls, this criteria is primarily intended for use with out of plane behavior.

2. Materials

The specified compressive strength of concrete masonry (f'_m) is based on unit test method (section 2.1).

2.1 Unit Test Method

Specified compressive strength f'_m for net area of masonry composed of solid or hollow units shall be taken from Table 2.1. Values of f'_m may be interpolated but not extrapolated.

Table 2.1 Values of f'_m for Masonry

Compression test strength of masonry units, psi, on the net cross sectional area	Compressive Strength of Masonry	
	f'_m , psi	
	Type M and S Mortar	Type N Mortar
6000 or more	2400	1350
4000	2000	1250
2500	1550	1100
2000	1350	1000
1500	1150	875
1000	900	700

3. Loads

The loads to be used in the re-evaluation will be taken from the original project design criteria as reported in the FSAR. The load factors shall be 1.0. The load combination will be the same as reported in the FSAR.

4. Masonry Wall Analysis Techniques

4.1 Boundary Conditions

Boundary conditions to be used for concrete masonry walls are dependent on the structural details used to tie the masonry to the rest of the structure. When the boundary condition is assumed it should be used consistently for the all subsequent calculation.

4.1.1 Simple Supports

Simple supports on top and sides will be assumed if adequate shear transfer can be demonstrated. The shear transfer can be accomplished by mechanical methods (embedments, dowels, masonry ties, angles etc.) or by wedging action. A plain mortar joint on the bottom support may provide the necessary shear transfer due to the friction caused by the normal forces.

4.2 Frequency of Masonry Walls

Frequency of the masonry wall may be calculated assuming one-way or two-way behavior. For one-way behavior with simple supports, the frequency is:

$$f_o = k \sqrt{\frac{E_m I}{m}}$$

where

f_o = fundamental frequency (cycles per second)

E_m = modulus of elasticity of masonry (1000 f')

I = moment of inertia

K = a constant which depends on geometry, boundary conditions and loading

For two-way behavior the frequency will be calculated using the available plate equations. The general form of the frequency equation is:

$$f = K \sqrt{D}$$

where D is the flexural stiffness and K is a constant defined above.

It is recognized that the variation of material properties is important in calculating the walls' seismic response. A variation of E_m will be considered and a range of frequencies is determined. The frequency selected will be the one which gives the maximum response.

4.3 Attachment Inertial Loads

The stresses due to attachment inertial loads will be combined with the wall inertial stresses in an absolute sum method.

5. Allowable Stresses

5.1 Severe Environmental

For the load combinations specified in the FSAR, stresses in the reinforcement and masonry should be computed using working stress procedures. For normal and severe environmental loads, the stresses designated as S in Table 1 and 2 shall be used. No increase in allowable stress is permitted for an OBE earthquake.

5.2 Extreme and Abnormal Environmental

For abnormal and extreme environmental loads the stresses designated as U in Tables 1 and 2 shall be used.

5.3 Provisions for Special Analysis

In general, the derivation of load intensities, evaluation of wall response, and comparison to allowable stresses shall be by linear elastic analysis and working stress procedures. However, the following exceptions are permitted.

1. In determining an appropriate equivalent static load for impactive and impulsive loads, elastro-plastic behavior may be assumed with appropriate ductility ratios for reinforced masonry providing that yielding occurs in the tensile reinforcement prior to the elastically calculated masonry compressive stress of $0.85f'_m$. Also, it must be shown that excessive deflections will not result in loss of function of non safety-related systems.
2. In lieu of combining maximum values of loads or response, time-history analysis values may be used.

6. Damping Values for Seismic Analysis

The following damping values will be used when re-evaluating the walls using amplified response spectra.

6.1 Out of Plane Loading

6.1.1 Unreinforced Walls

OBE Earthquake - 2%

SSE Earthquake - 4%

6.1.2 Reinforced Walls

OBE Earthquake - 4%

SSE Earthquake - 7%

7. Operability

If the allowable stresses are exceeded, a check is made to insure that the walls can maintain their structural integrity. The unreinforced walls used on this project are considered operable if the maximum tensile stresses are less than 85% of the modulus of rupture of the wall. It is recognized that a wall may have a reserve capacity due to arching action even beyond this point.

The modulus of rupture is the stress level at which a material fails in tension. The modulus of rupture of masonry is dependent on the type of unit (hollow or solid), the type of mortar, the direction of the load (normal or parallel to bed joint) etc. Tests were done on wall panels to arrive at the code allowable used by NCMA, ACI etc. A factor of safety of four (4) is used for the allowable stress. The modulus of rupture for Type N mortar used with hollow blocks is 64 psi. This number is the average of four (4) tests reported in reference 1 below. The tensile stress is normal to the bed joint.

The modulus of rupture of solid blocks was taken as 108 psi. This number was not based on test directly but was interpolated from test results of Type M and S mortar.

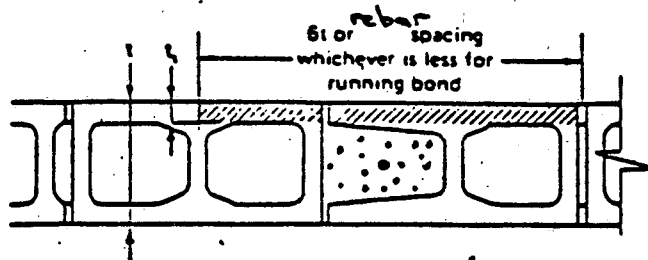
Reference:

1. Research data and discussion relating to "Specification for Design and Construction of Load Bearing Masonry" - NCMA 1970.

Description	S		U	
	Allowable (psi)	Maximum (psi)	Allowable (psi)	Maximum (psi)
Compressive				
Axial ⁽¹⁾	$0.22f'_m$	1000	$0.44f'_m$	2000
Flexural ⁽²⁾	$0.33f'_m$	1200	$0.85f'_m$	3000
Bearing				
On full area	$0.25f'_m$	900	$0.62f'_m$	2250
On one-third area or less	$0.375f'_m$	1200	$0.95f'_m$	3000
Shear				
Flexural members	$1.1\sqrt{f'_m}$	50	$1.7\sqrt{f'_m}$	75
Shear Walls ^(3,4)				
Masonry Takes Shear				
$M/Vd \geq 1$	$0.9\sqrt{f'_m}$	34	$1.5\sqrt{f'_m}$	56
$M/Vd = 0$	$2.0\sqrt{f'_m}$	74	$3.4\sqrt{f'_m}$	123
Reinforcement Takes Shear				
$M/Vd \geq 1$	$1.5\sqrt{f'_m}$	75	$2.5\sqrt{f'_m}$	125
$M/Vd = 0$	$2.0\sqrt{f'_m}$	120	$3.4\sqrt{f'_m}$	180
Reinforcement				
Bond				
Plain Bars		60		80
Deformed Bars		140		186
Tension				
Grade 40		20,000		$0.9F_y$
Grade 60		24,000		$0.9F_y$
Joint Wire		$.5F_y$ or 30,000		$0.9F_y$
Compression		$0.4F_y$		$0.9F_y$

Notes to Table 1:

- (1) These values should be multiplied by $(1 - (\frac{h}{40t})^3)$ if the wall has a significant vertical load.
- (2) This stress should be evaluated using the effective area shown in Figure 1.



Area assumed effective in flexural compression,
force normal to face

FIGURE 1

- (3) Net bedded area shall be used with these stresses
- (4) For M/Vd values between 0 and 1 interpolate between the values given for 0 and 1.

Table 2: Allowable Stresses in Unreinforced Masonry

Description	S		U	
	Allowable (psi)	Maximum (psi)	Allowable (psi)	Maximum (psi)
Compressive				
Axial ⁽¹⁾	$0.22f'_m$	1000	$0.44f'_m$	2000
Flexural	$0.33f'_m$	1200	$0.85f'_m$	3000
Bearing				
On full area	$0.25f'_m$	900	$0.62f'_m$	2250
On one-third area or less	$0.375f'_m$	1200	$0.95f'_m$	3000
Shear				
Flexural members ^(2, 3)	$1.1 \sqrt{f'_m}$	50	$1.7 \sqrt{f'_m}$	75
Shear walls ⁽²⁾	$0.9 \sqrt{f'_m}$	34	$1.5 \sqrt{f'_m}$	56
Tension				
Normal to bed joints				
Hollow units	$0.5 \sqrt{m_o}$	25	$0.83 \sqrt{m_o}$	42
Solid or grouted	$1.0 \sqrt{m_o}$	40	$1.67 \sqrt{m_o}$	67
Parallel to bed joints ⁽⁴⁾				
Hollow units	$1.0 \sqrt{m_o}$	50	$1.67 \sqrt{m_o}$	84
Solid or grouted	$1.5 \sqrt{m_o}$	80	$2.5 \sqrt{m_o}$	134
Grout Core	$2.5 \sqrt{f'_c}$		$4.2 \sqrt{f'_c}$	
Collar joints				
Shear		8		12
Tension		8		12

Notes to Table 2:

- (1) These values should be multiplied by $(1 - (\frac{h}{40t})^3)$ if the wall has a significant vertical load.
- (2) Use net bedded area with these stresses.
- (3) For stacked bond construction use two-thirds of the values specified.
- (4) For stacked bond construction use two-thirds of the values specified for tension normal to the bed joints in the head joints of stacked bond construction.

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S

NR3

SUBJECT

MASONRY WALLS

CALC. SET NO.		REV	COMP. BY	CHK'D. BY
PRELIM.		0	J. KATZ	H. P.
FINAL			DATE 10-1-80	DATE 10-1-80
VOID				
SHEET OF			DATE	DATE
J.O. 6604-210				

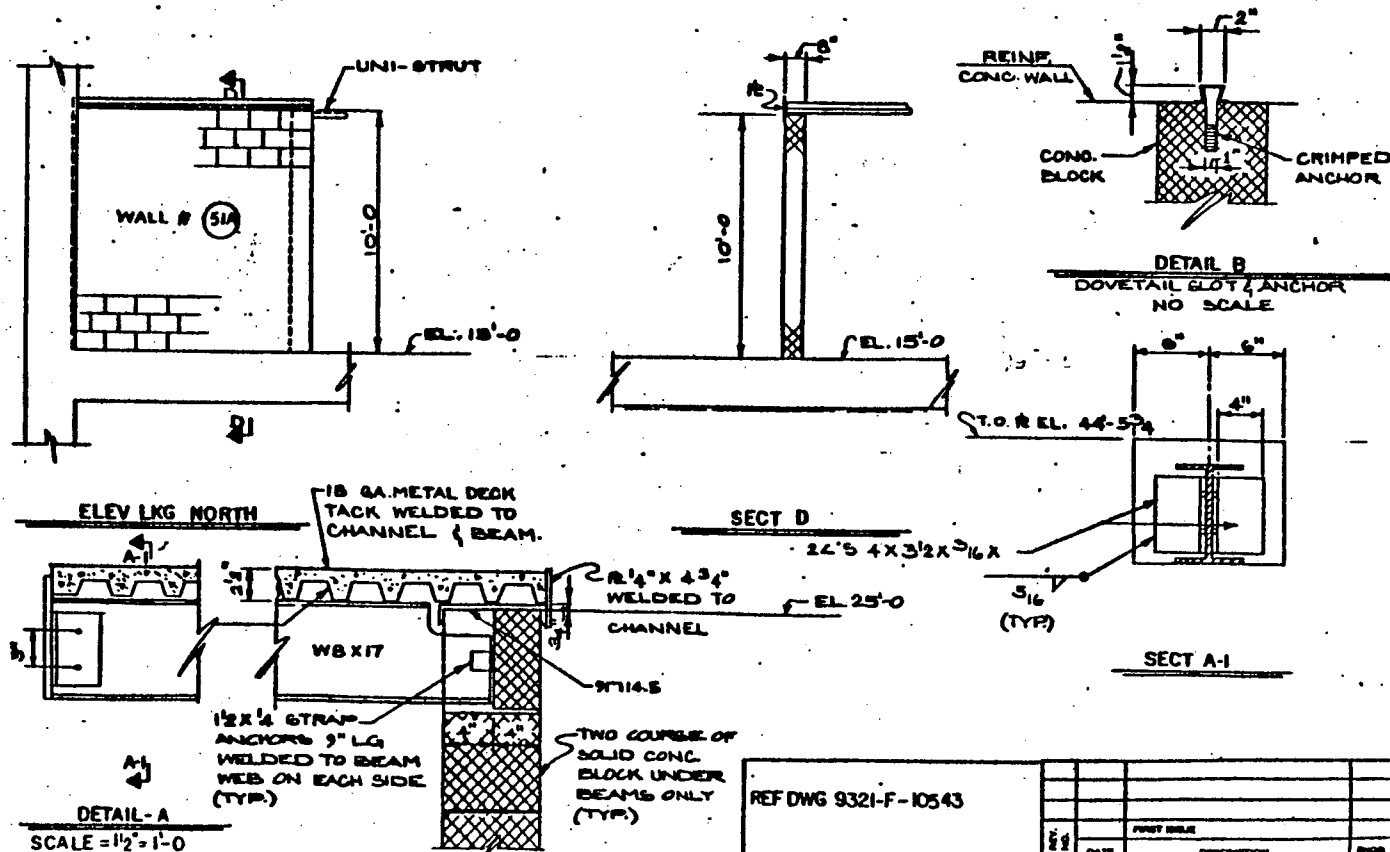
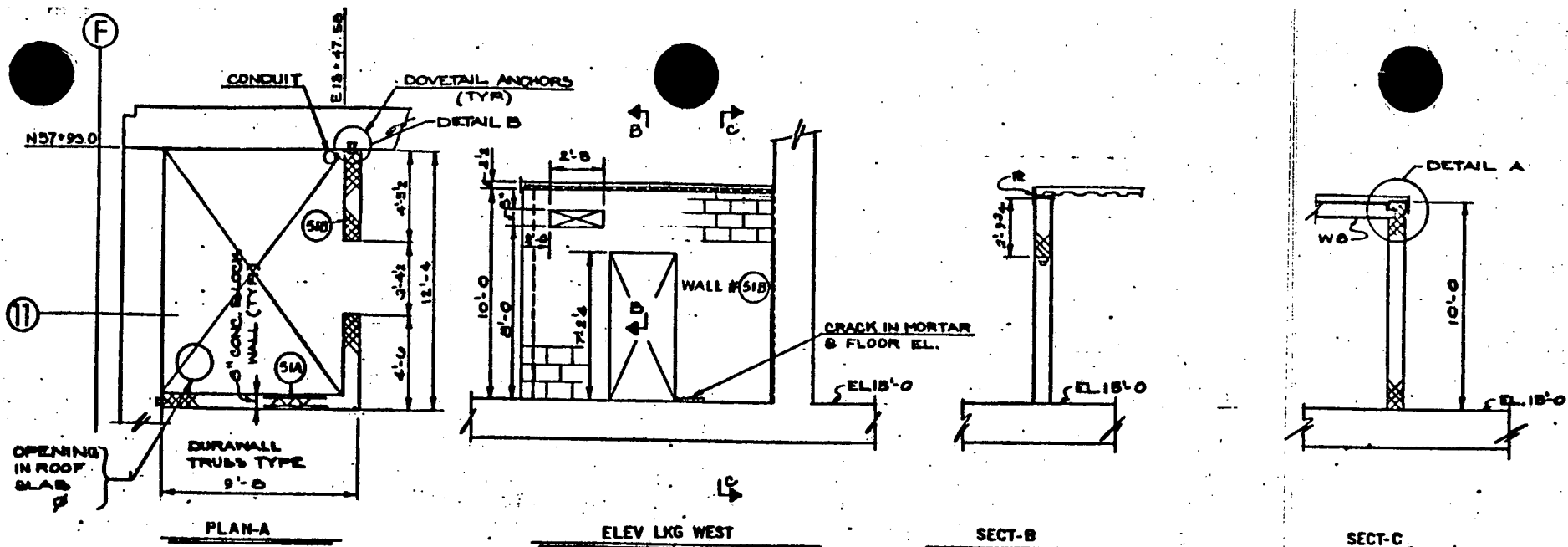
ALLOWABLE STRESSES-UNREINFORCED MASONRY

$$m_o = 750 \psi$$

$$\text{HOLLOW } f'_m = 700 \psi$$

$$\text{SOLID } f'_m = 1100 \psi$$

WALL TYPE		HOLLOW		SOLID	
		OBE	DBE	OBE	DBE
<u>COMPRESSIVE</u>	AXIAL	154 ψ	308 ψ	242 ψ	484 ψ
	FLEXURAL	231 ψ	595 ψ	363 ψ	935 ψ
<u>BEARING</u>	FULL AREA	175 ψ	434 ψ	275 ψ	682 ψ
	1/3 AREA OR LESS	262 ψ	665 ψ	412 ψ	1045 ψ
<u>SHEAR</u>	FLEXURAL MEM.	29 ψ	44 ψ	36 ψ	56 ψ
	SHEAR WALLS	24 ψ	40 ψ	30 ψ	50 ψ
<u>TENSION</u>	NORMAL TO BED JOINTS	13 ψ	23 ψ	27 ψ	44 ψ
	PARALLEL TO BED JOINTS	27 ψ	46 ψ	42 ψ	68 ψ
	GROUT CORE	NONE	NONE	NONE	NONE
<u>COLLAR JOINTS</u>					
	SHEAR	8 ψ	12 ψ	8 ψ	12 ψ
	TENSION	8 ψ	12 ψ	8 ψ	12 ψ



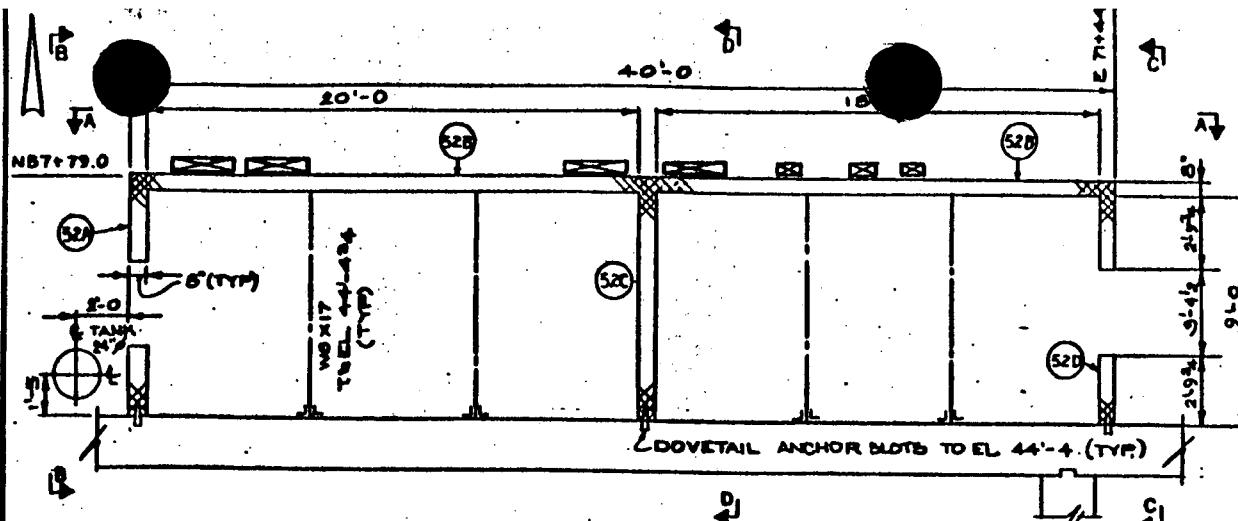
NOTES:

1. HORIZONTAL JOINTS IN CONC. BLOCK WALLS SHALL HAVE A TRUSS TYPE REINFORCING EVERY TWO COURSES OF BLOCKS. EXTRA-HEAVY DUR-O-WALL OR EQUAL.
2. WHERE CONC. BLOCK WALLS BUTT THE VERTICAL SURFACES OF REINFORCED CONC. WALLS PROVIDE DOVETAIL ANCHOR SLOTS IN THE REIN. CONC. WALLS. FOR GALV. METAL WALL TIES 2" O.C.S. VERTICALLY.

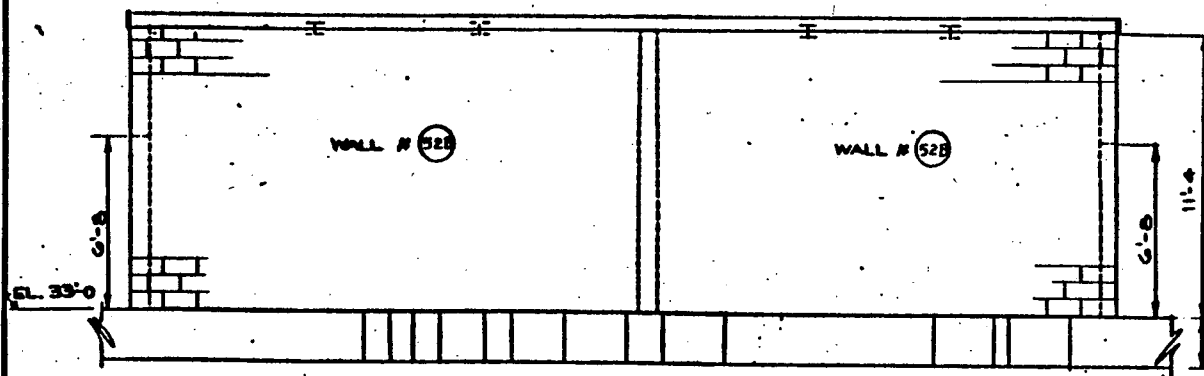
ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 51A/B CONTROL BLDG. ELEV. 15'-0	
SCALE: 1/4" = 1'-0" (N) 6604.210-A	

REF DWG 9321-F-10543

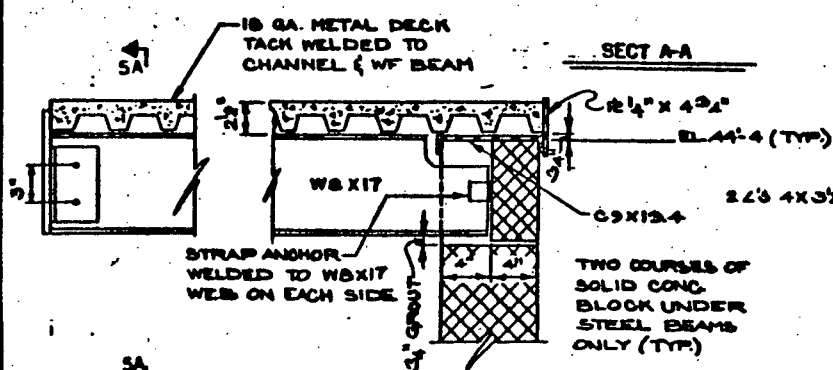
DATE	DESCRIPTION	BY	CHK



PLAN A

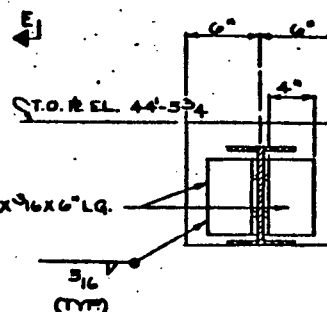


SECTION A-A

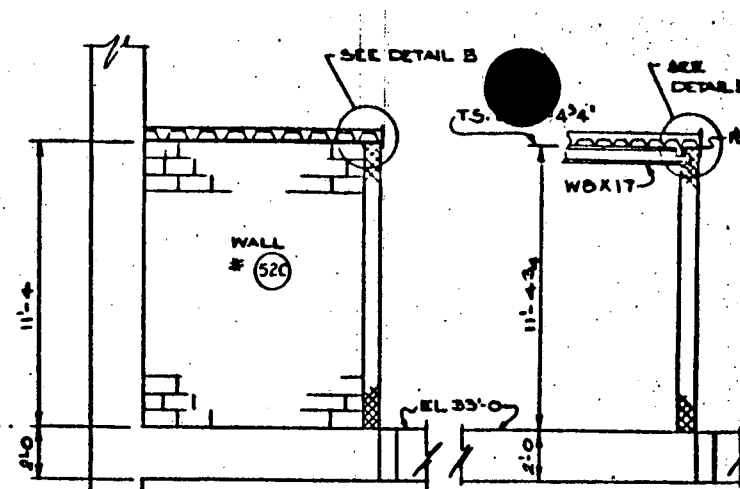


DETAIL S

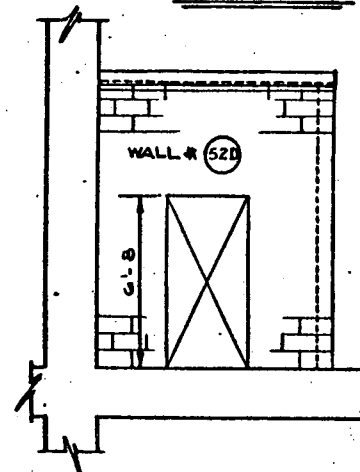
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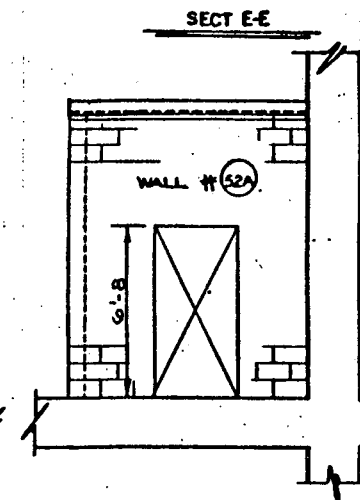
SECTION 5A



SECTION D-D



SECTION C-C

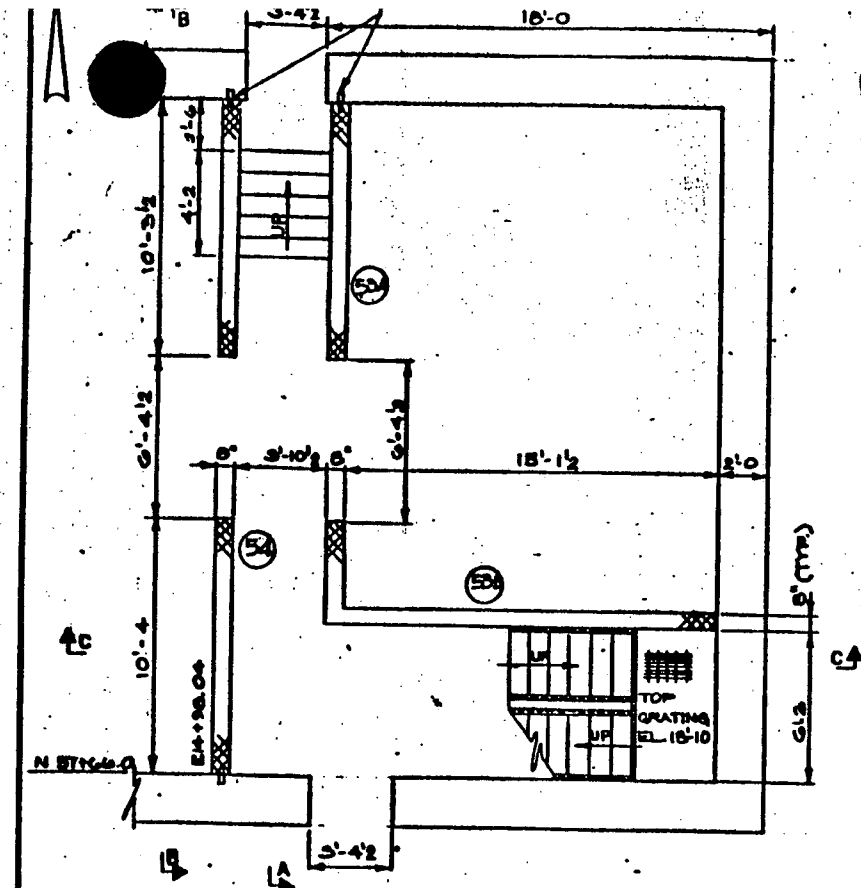


SECTION E-E

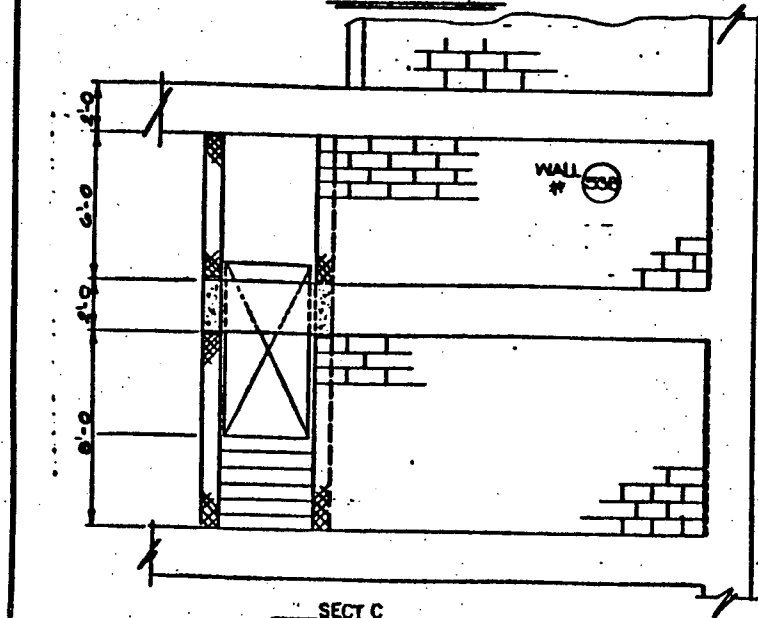
REF DWG. 9321-F-10553

DATE	DESCRIPTION	BY	CHK	APP	ENG

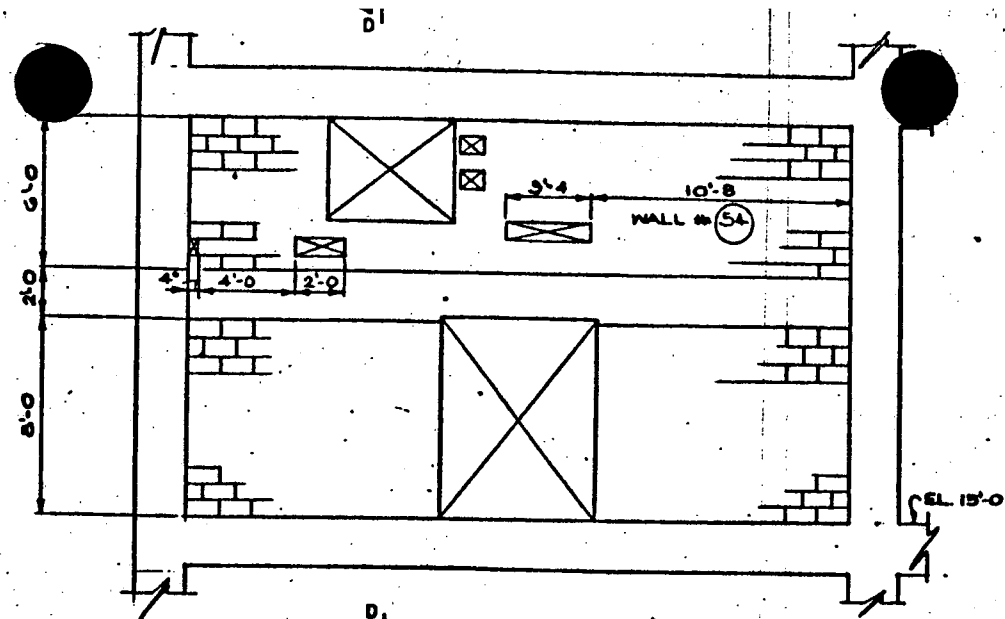
ENGINEER	DATE
STATE REG.	NO.
PASNY	
MASONRY WALL NOS. 52 A-D	
CONTROL BLDG.	
ELEV. 33'-0"	
SCALE = 1/4" = 1'-0"	6604.210-B



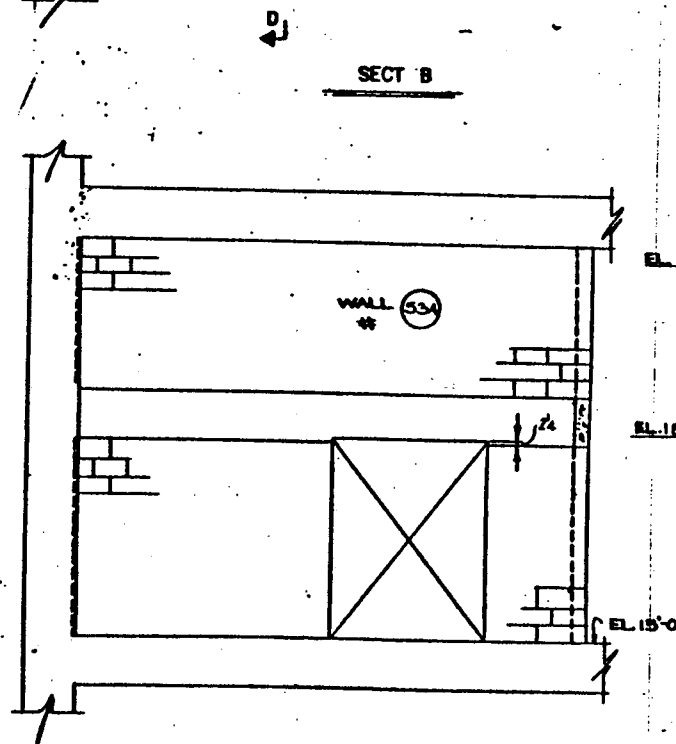
PLAN A



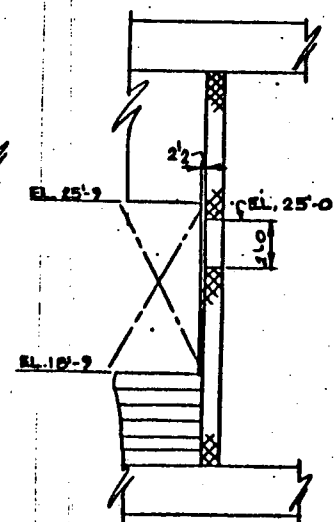
SECT C



SECT B



SECT A

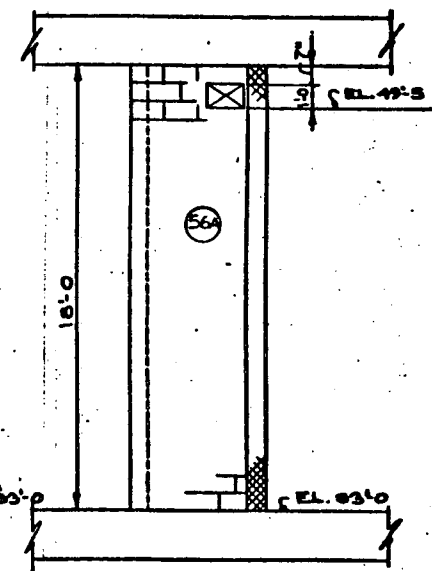
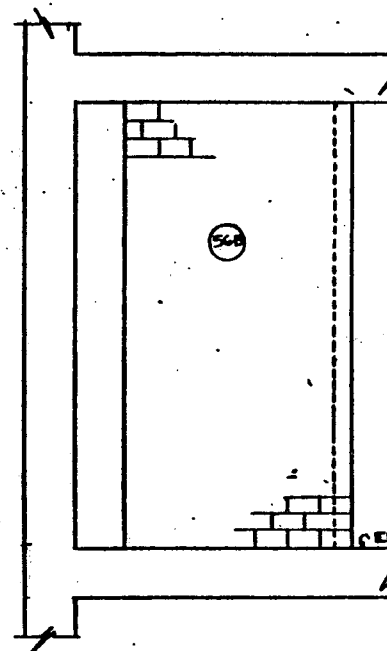
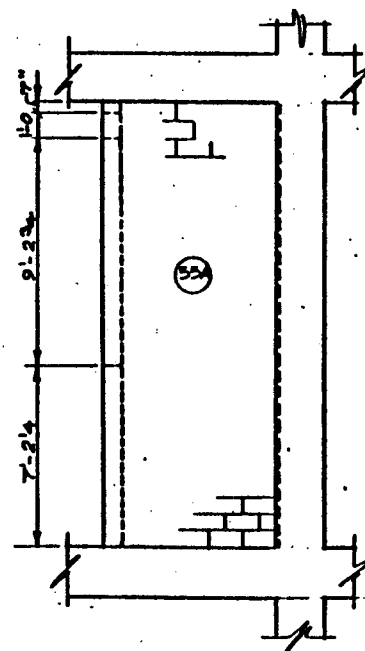
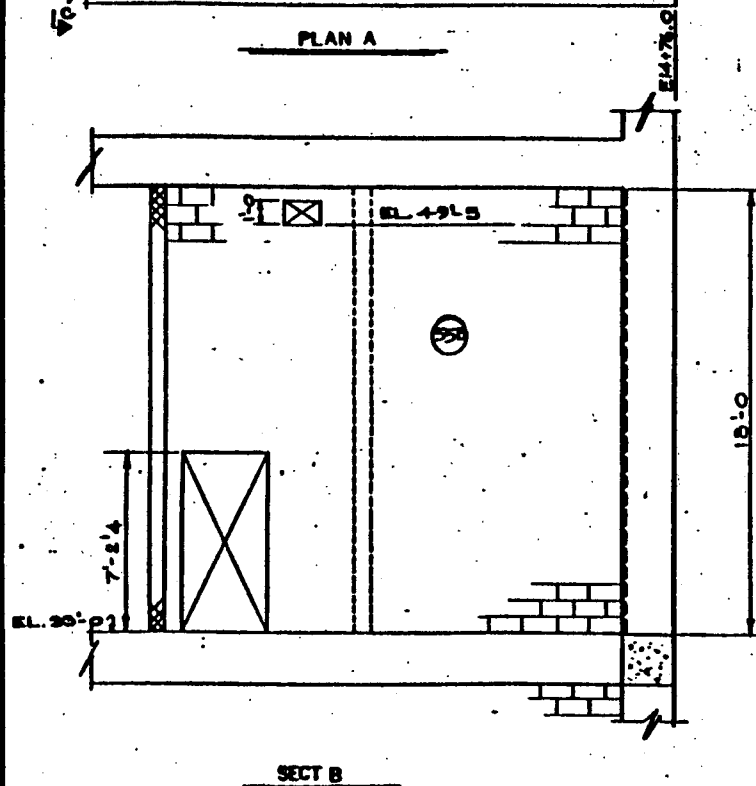
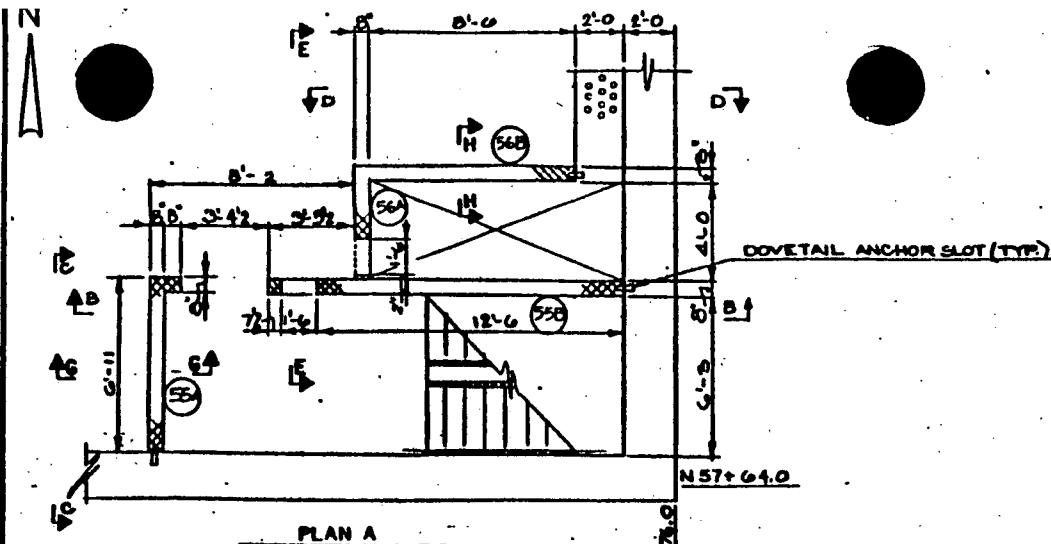


SECT D

REF NO 9321-F-13803

DATE	DESCRIPTION	BY	CHK

ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 53-54 CONTROL BLDG. ELEV. 15'-0	
SCALE: 1/4" = 1'-0	6604.210-C



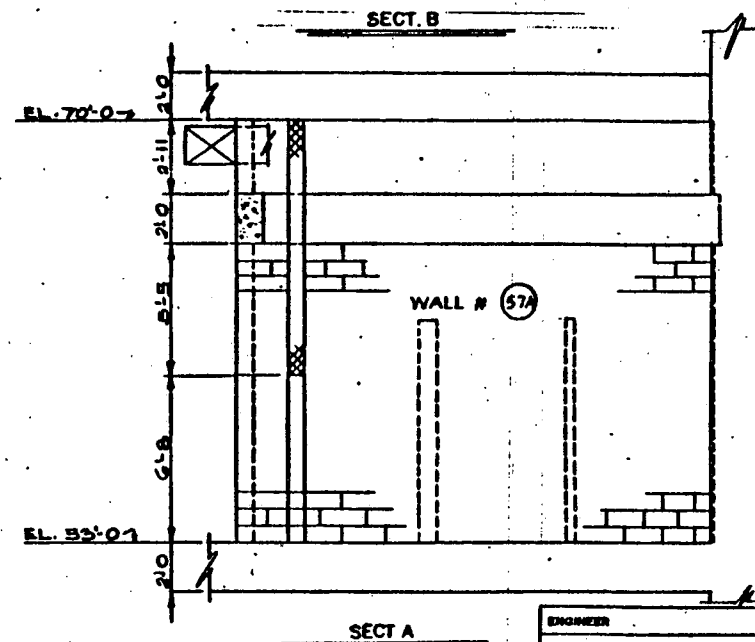
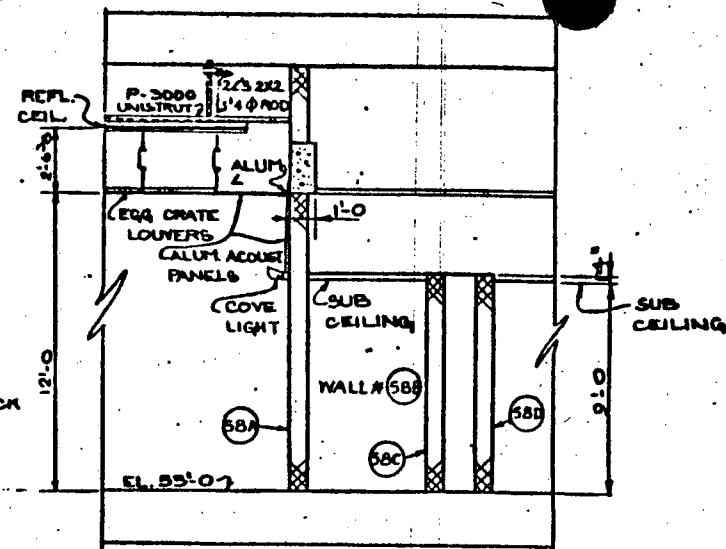
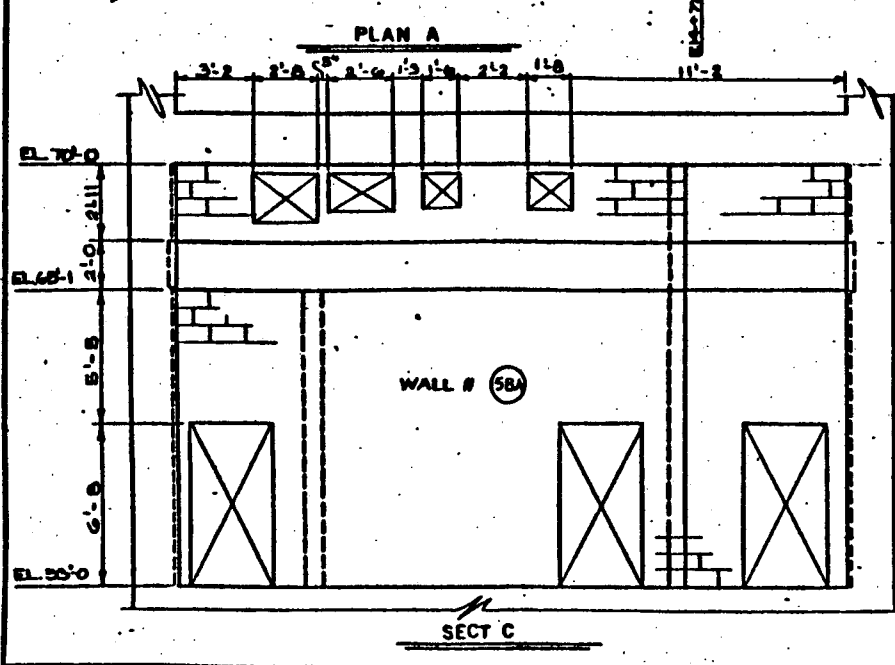
REF DWG 9321-F-13803

DATE	DESCRIPTION	BY	CHK

ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 55-56 CONTROL BLDG. ELEV. 33'-0	
SCALE = 1/4"=1'-0	
6604.210-D	

PMT.		FUND			
NO.					
	DATE	DESCRIPTION	SCH.	SUP.	SNG

ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 55-56 CONT. BLDG. ELEV. 330	
 United Engineers & Constructors, Inc.	
SCALE = 1/4" = 1'-0"	6604.210-D ₂

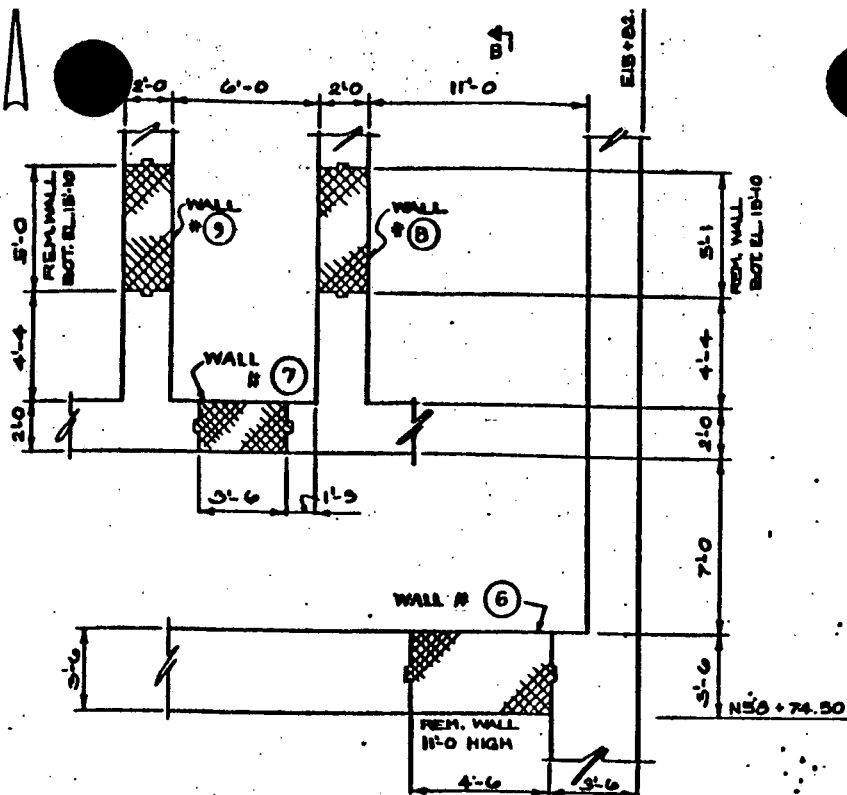
[illegible]

ENGINEER	DATE
STATE REG.	NO.

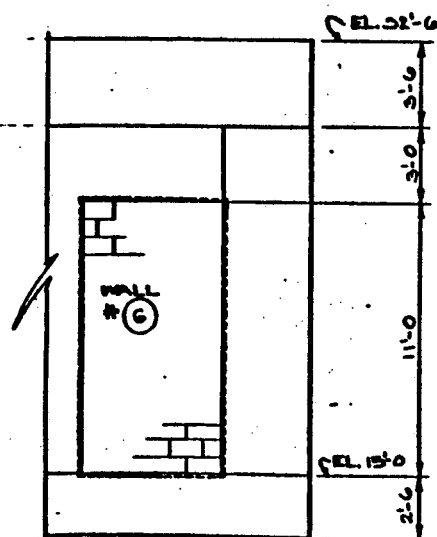
PASNY
MASONRY WALL NO.57-58
CONTROL BUILDING
ELEV. 53'-0

 united engineers a corporation

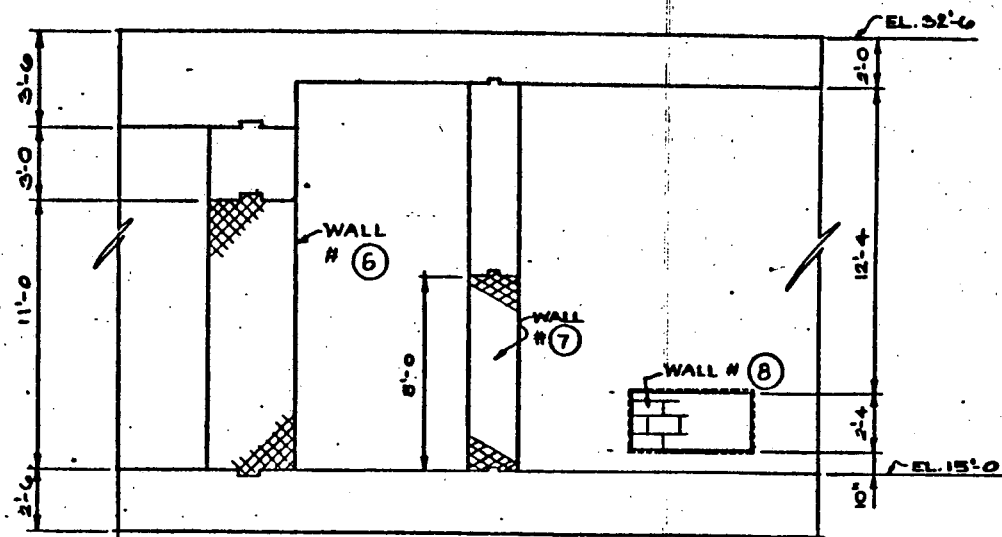
SCALE: 1/4" = 1'-0" 6604.210-E



PLAN A
@ EL. 15'-0"



ELEV LKG NORTH



SECT B

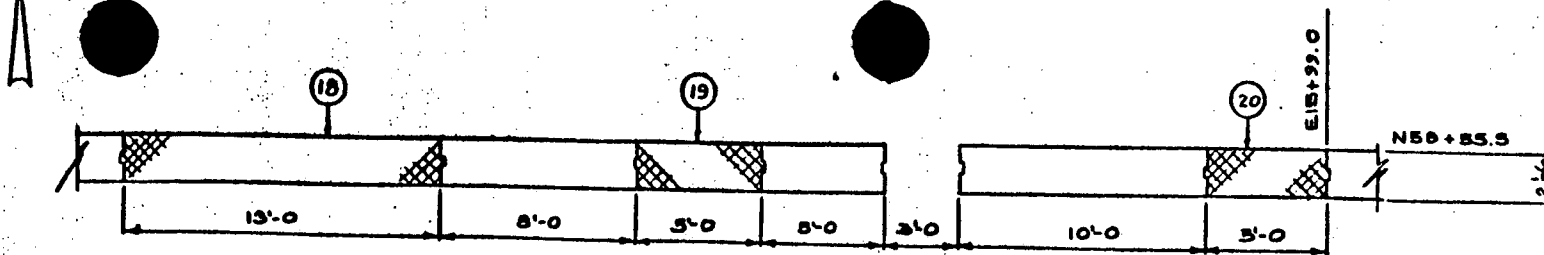
NOTE:

INTERIOR EMBEDDED WALL OPENINGS TO BE CONSTRUCTED WHERE SHOWN WITH HORIZ. & VERT. KEYS AS SHOWN IN TYPICAL DETAILS WITH DOWELS OMITTED. OPENINGS TO BE FILLED LATER WITH SOLID CONCRETE BLOCKS OF 150 LB. PER CU. FT. DENSITY WITH MORTAR JOINTS. REINFORCED WITH CUPROWALL OR EQUAL REINFORCEMENT EVERY OTHER JOINT AS PER ADDENDUM NO. 4 OF SPECIFICATION 9321-05-29-1.

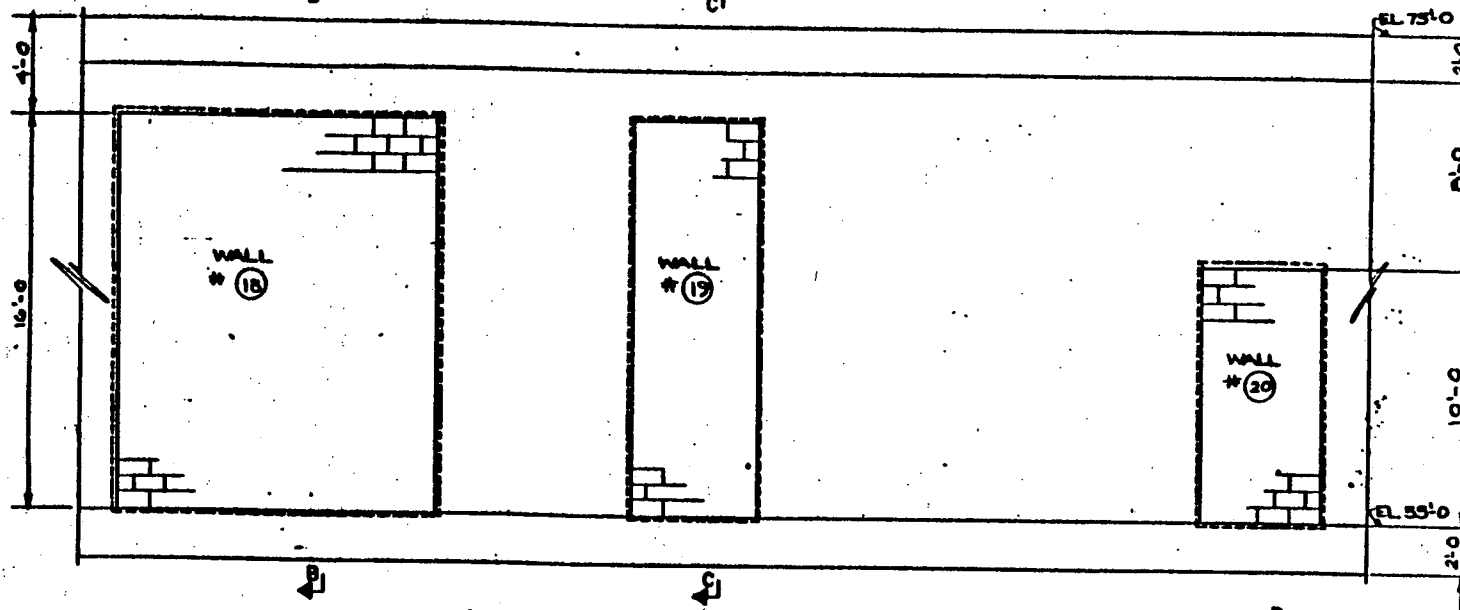
REF. DWG. 9321-F-11663

DATE	DESCRIPTION	BY	CHK

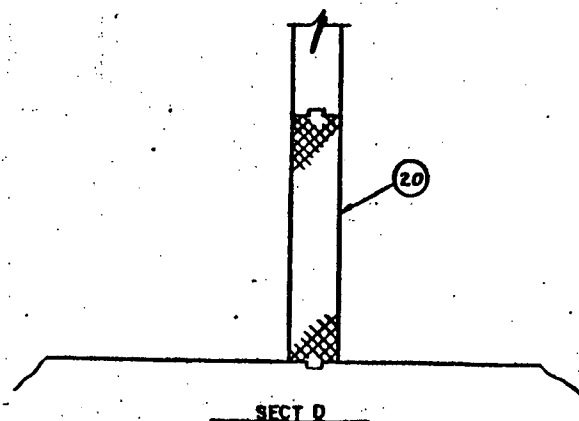
ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 6-9 P.A.B. ELEV. 15'-0"	
united engineers	
SCALE: 1/4" = 1'-0"	6604.210-1



PLAN A



ELEV LRG NORTH



SECT D

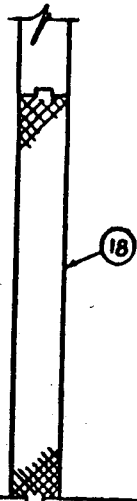
NOTE:

1. INTERIOR REMOVABLE WALL OPENINGS TO BE CONSTRUCTED WHERE SHOWN WITH HORIZONTAL & VERTICAL KEYS AS SHOWN IN TYPICAL DETAILS WITH DOWELS OMITTED. OPENINGS TO BE FILLED LATER WITH SOLID CONCRETE BLOCKS OF 180 LBS. PER CU. FT. DENSITY WITH MORTAR JOINTS, REINFORCED WITH DURA-WALL OR EQUAL REINFORCEMENT EVERY OTHER JOINT AS PER APPENDIX NO. 4 OF SPECIFICATION 9321-05-29-1.
2. FOR TYPICAL KEY DETAIL SEE DWG. A, WALLS NO. 51A, B.

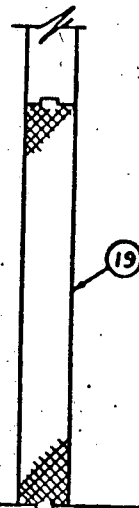
REF DWG 9321-F-1693,
11773

DATE	DESCRIPTION	BY	CHK

ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 18-20 P.A.B. ELEV. 55'-0	
united engineers	
SCALE = 1/4" = 1'-0	6604.210-K



SECT B

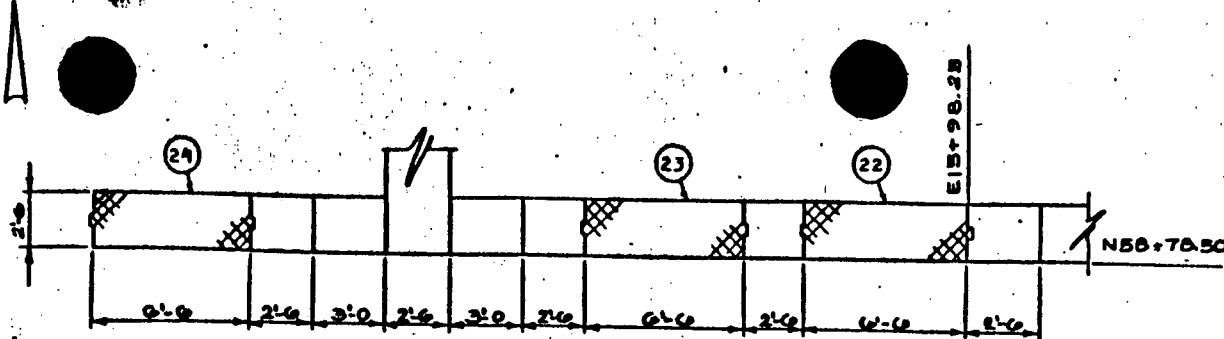


SECT C

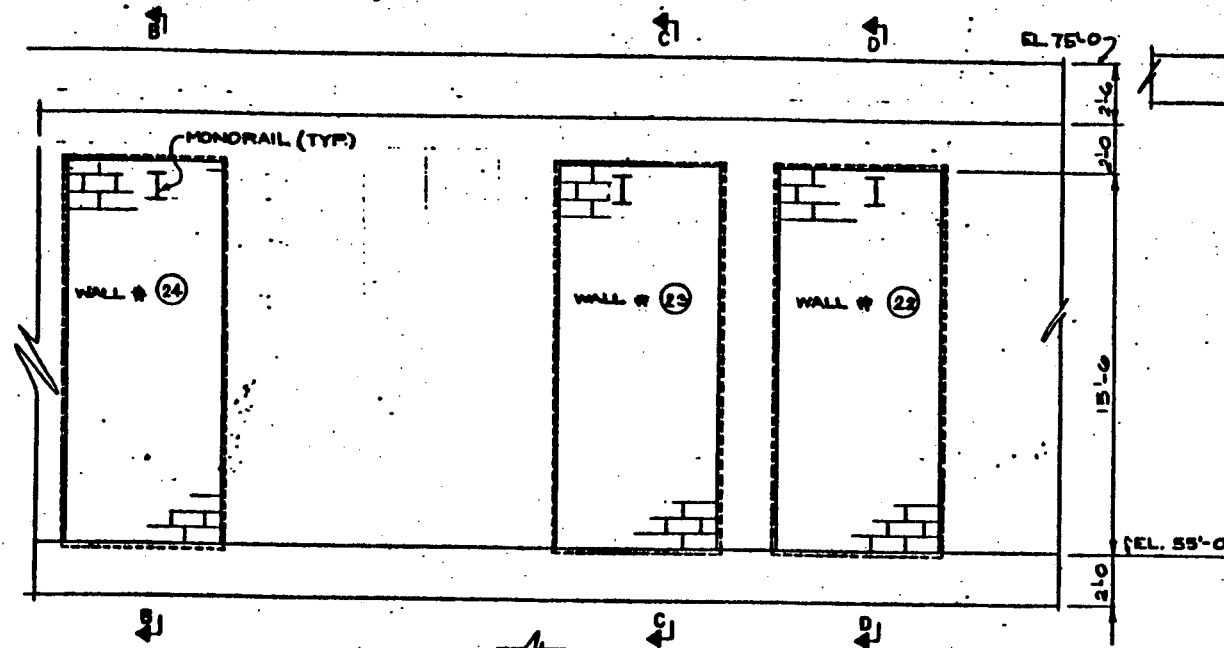
REF DWG 9321-F-11693, 11773

REV	DATE	DESCRIPTION	BY	CHK

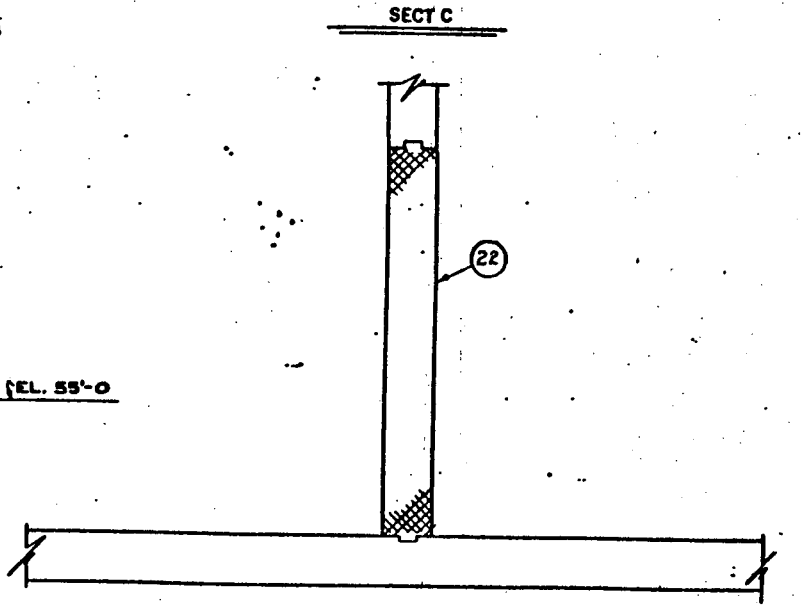
ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 18, 19 P.A.B. ELEV. 55'-0"	
 United Engineers	
SCALE: 1/4" = 1'-0"	6604.210-Ka



PLAN A
ELEV. 55'-0"



SECTION B



SECTION C



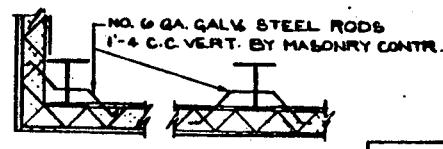
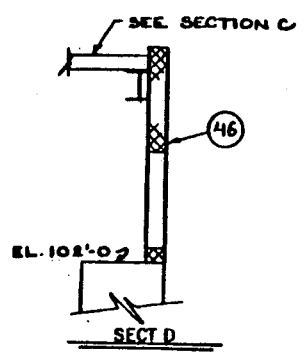
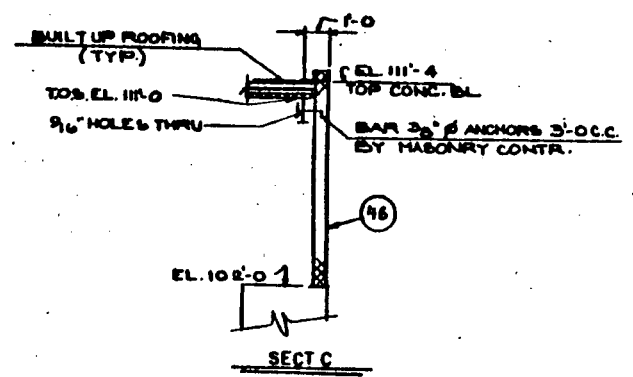
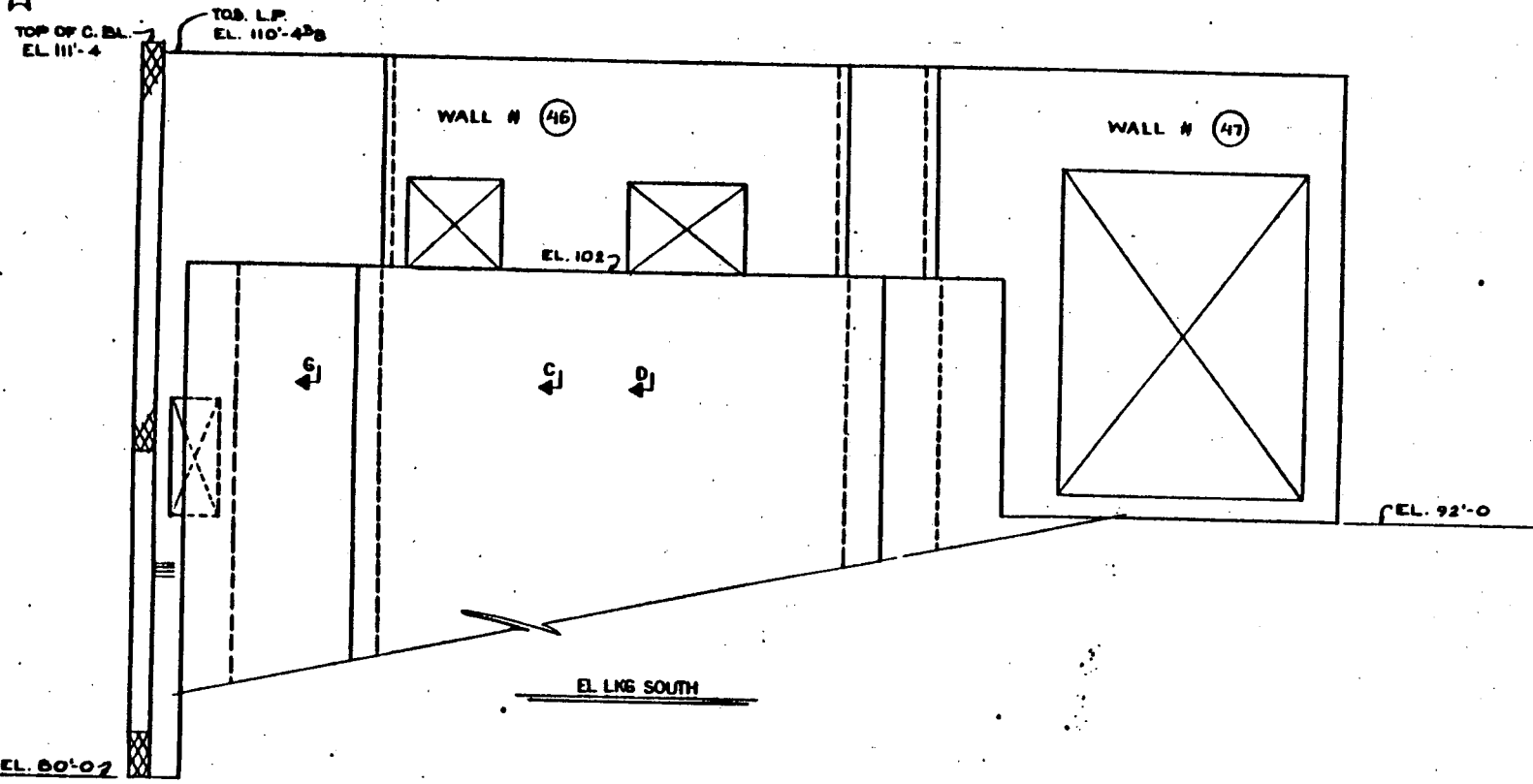
SECTION D

NOTE:
SEE NOTE #1 OF DWG. K FOR INTERIOR
REMOVABLE WALL OPENINGS.
FOR TYPICAL KEY DETAIL SEE DWG. A,
WALLS # 22A, B.

REF DWG 9321-F-11693, 11775.

ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS. 22-24 P.A.B. ELEV. 55'-0"	
united engineers	
SCALE: 1/4" = 1'-0"	
6604.210-M	

DATE	DESCRIPTION	BY	CHK.	APP.

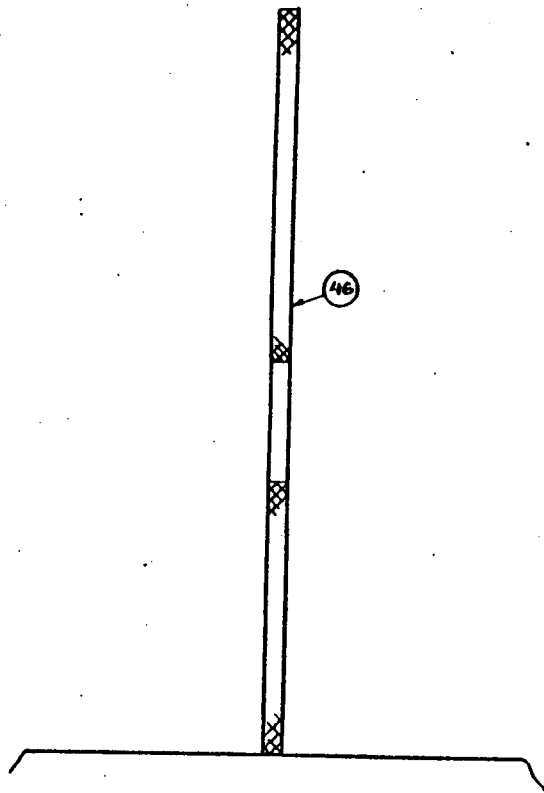


WALL REINF. DETAILS
FOR NORTH SOUTH WEST WALLS
SCALE = 1/2" = 1'-0"

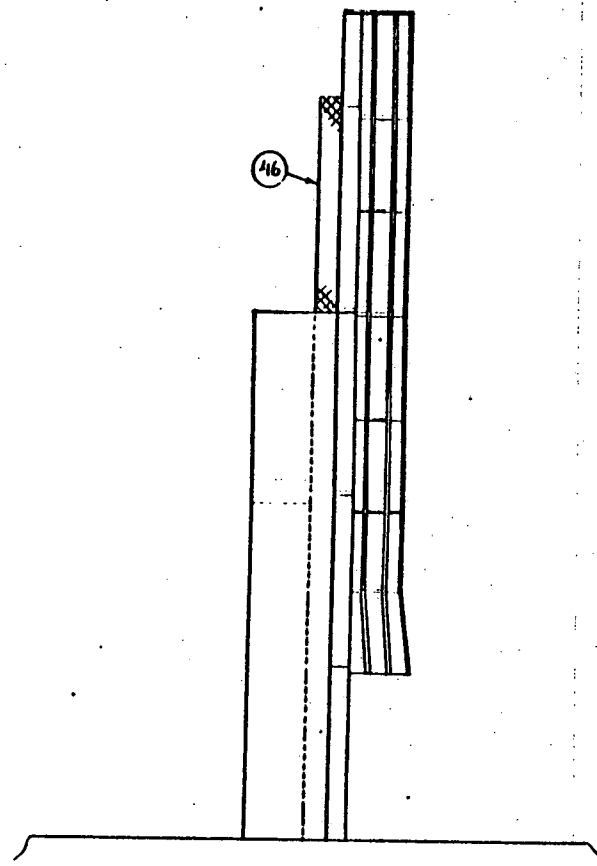
REF. DWG. 9221-F-12993

NO.	DATE	DESCRIPTION	BY	CHK.	APP.

ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NOS 46-48 FAN HOUSE ELEV. 80'-0	
e united engineers	
SCALE = 1/4" = 1'-0	6604.210-Va



SECT B

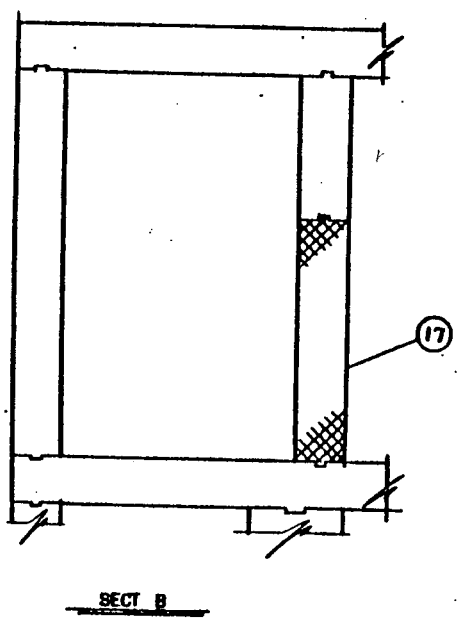
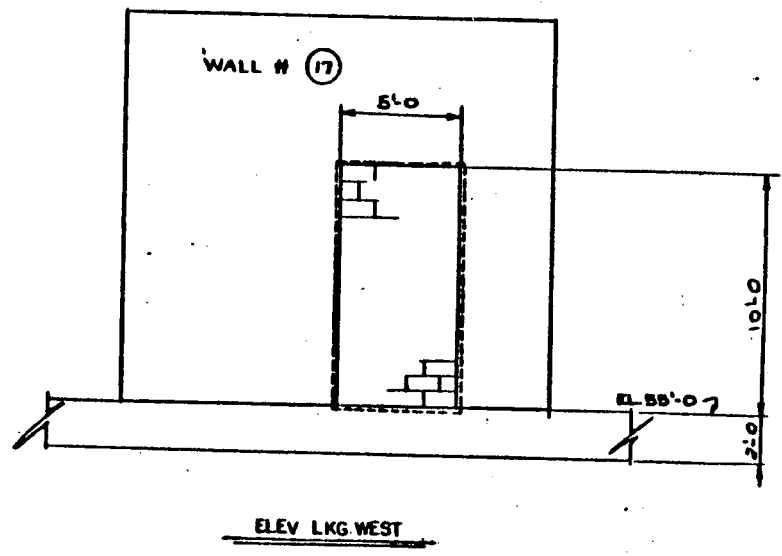
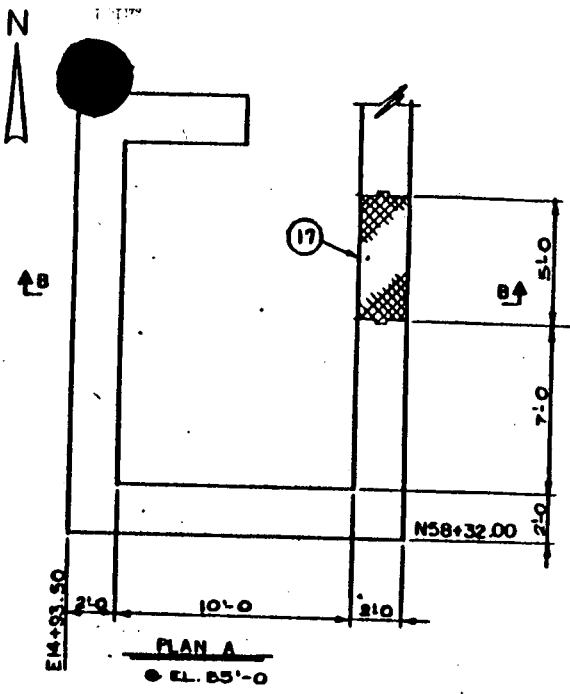


SECT G

REF DWG 9321-F-13993

DATE	DESCRIPTION	BY	CHK

ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NO. 46 FAN HOUSE ELEV. 80'-0	
united engineers	
SCALE = 1/4" = 1'-0 6604.210-Vb	

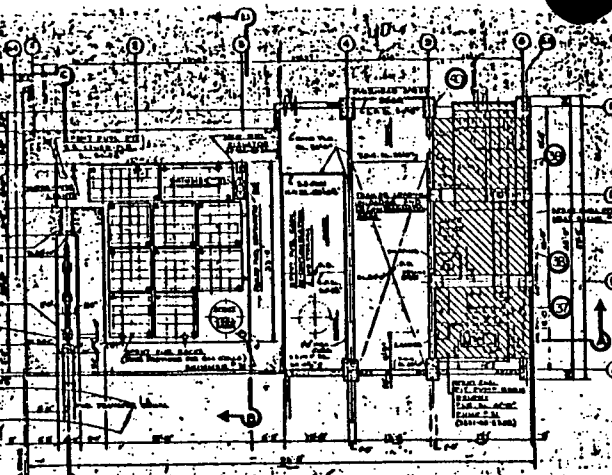


NOTE:
 FOR INTERIOR REMOVABLE WALL
 OPENINGS SEE NOTE # 1 OF DWG. N.
 FOR TYPICAL KEY DETAIL SEE
 DWG. A, WALLS NO. 51A, B.

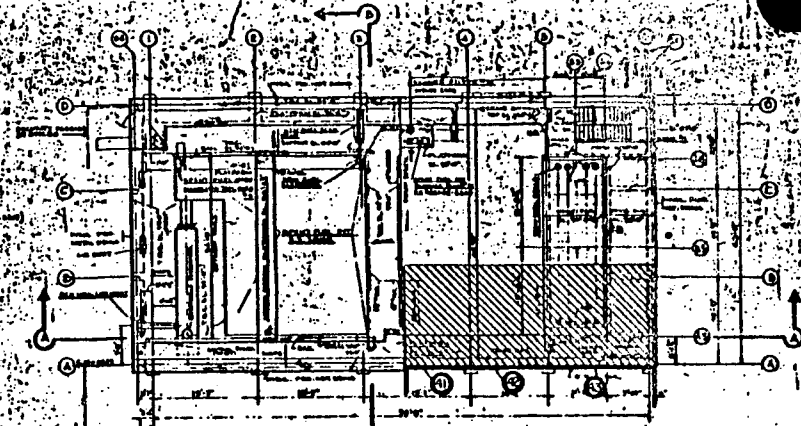
REF DWG 9321-F-25153

DATE	DESCRIPTION	BY	CHK	APP	DWG

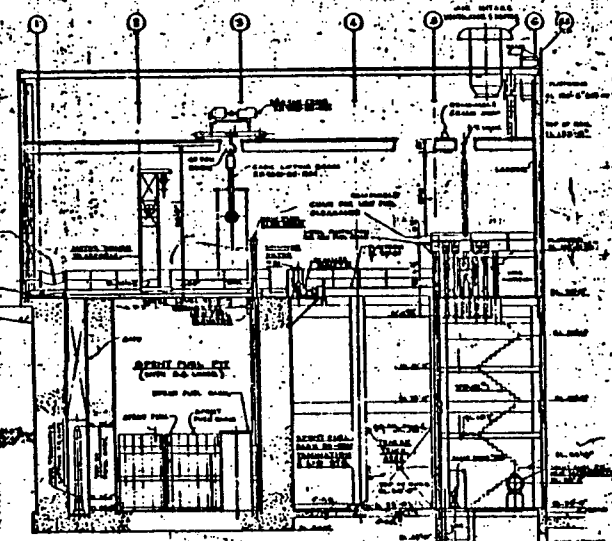
ENGINEER	DATE
STATE REG.	NO.
PASNY MASONRY WALL NO. 17 P.A.B. ELEV. 55'-0"	
united engineers	
SCALE: 1/4" = 1'-0"	6604.210-Y



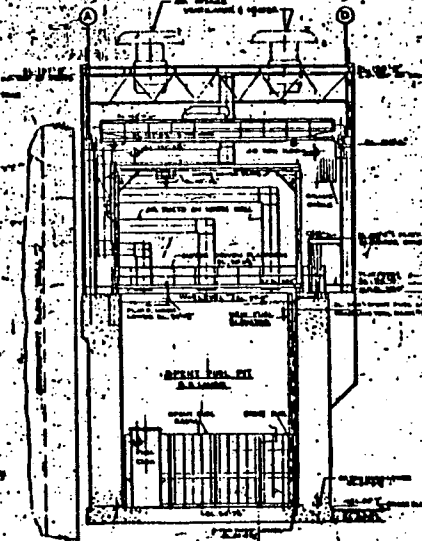
PLAN AT ELEV. 25'-0"
SCALE 1/4" = 1'-0"



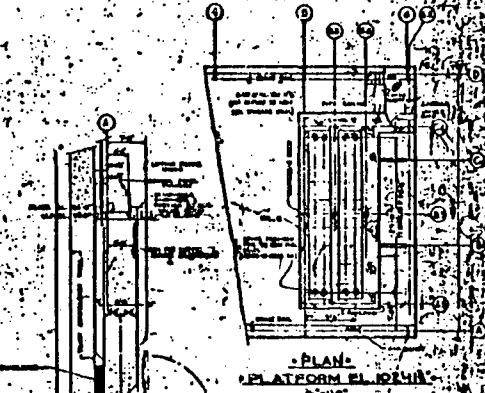
PLAN AT ELEV. 12'-0"
SCALE 1/4" = 1'-0"



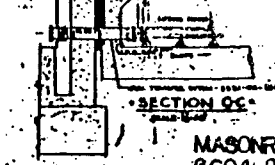
SECTION A-A
SCALE 1/4" = 1'-0"



SECTION B-B
SCALE 1/4" = 1'-0"



PLAN PLATFORM ELEV. 10'-0"
SCALE 1/4" = 1'-0"



SECTION C-C
SCALE 1/4" = 1'-0"

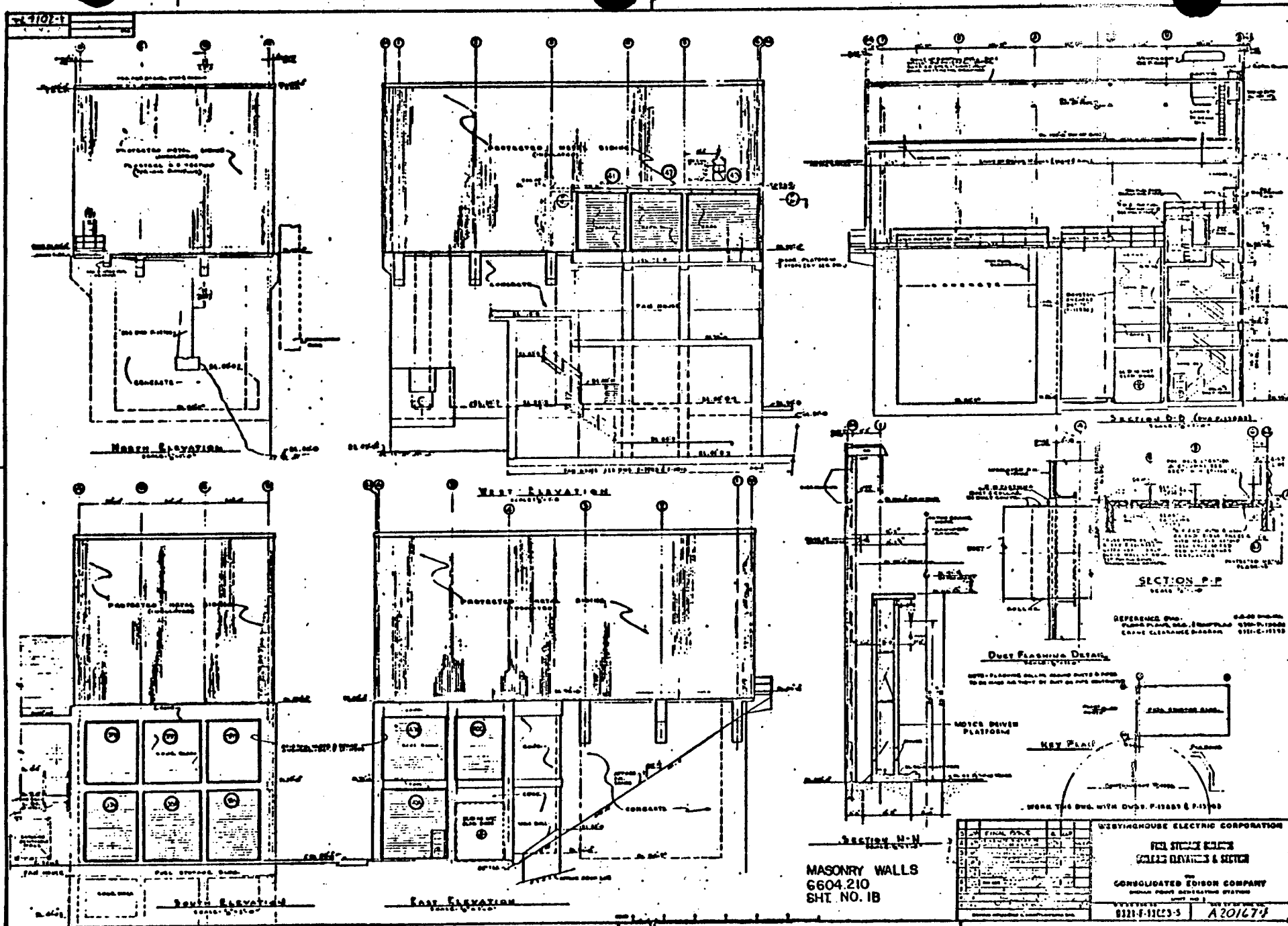
MASONRY WALLS
R604.210 SHT. NO. 1A

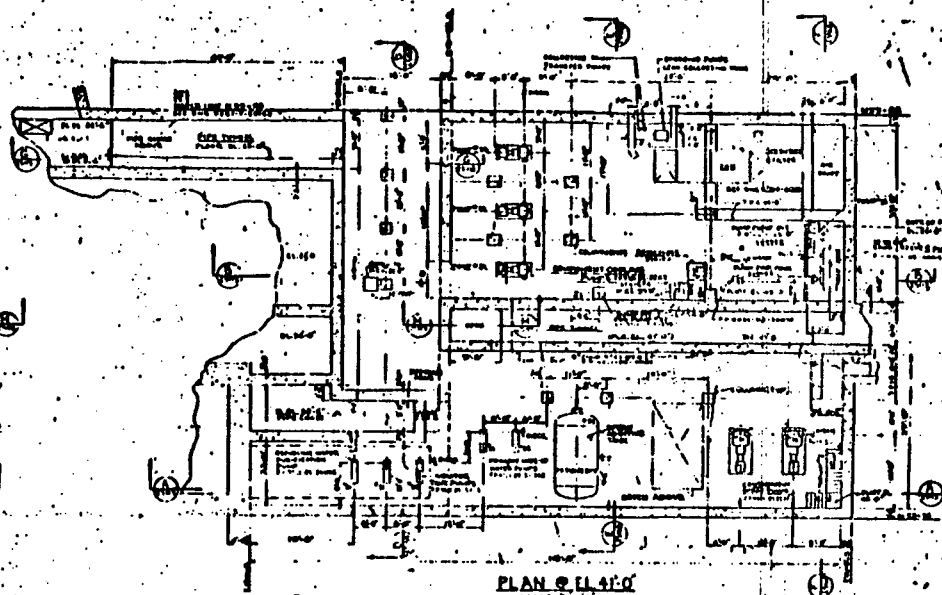
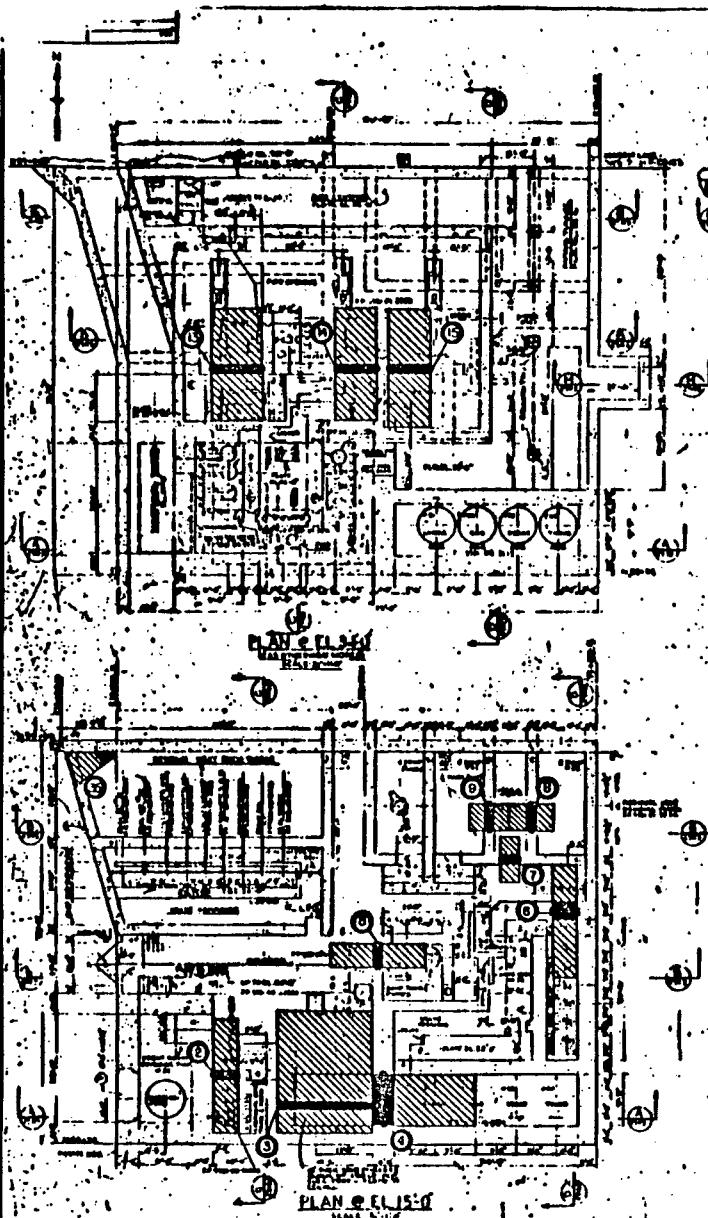
REFERENCE DRAWINGS

Sheet No.	Sheet Title
R604.210	General Arrangement
R604.211	Foundation
R604.212	Roof
R604.213	Interior
R604.214	Exterior
R604.215	Details

Sheet No.	Sheet Title
R604.210	General Arrangement
R604.211	Foundation
R604.212	Roof
R604.213	Interior
R604.214	Exterior
R604.215	Details

WESTINGHOUSE ELECTRIC CORPORATION
FUEL STORAGE BUILDING
GENERAL ARRANGEMENT
PLANS & ELEVATIONS
CONSOLIDATED EDISON COMPANY
NEW YORK, N. Y.
1921-25163-5





GENERAL NOTES

1. General arrangement of building.
2. General arrangement of building.
3. General arrangement of building.
4. General arrangement of building.
5. General arrangement of building.

LEGEND

1. General arrangement of building.
2. General arrangement of building.
3. General arrangement of building.
4. General arrangement of building.
5. General arrangement of building.

REFERENCE DRAWING

1. General arrangement of building.
2. General arrangement of building.
3. General arrangement of building.
4. General arrangement of building.
5. General arrangement of building.

MASONRY WALLS
6604.210
SHT. NO. 2A

WESTINGHOUSE ELECTRIC CORPORATION

PRIMARY AUXILIARY BUILDING

GENERAL ARRANGEMENT

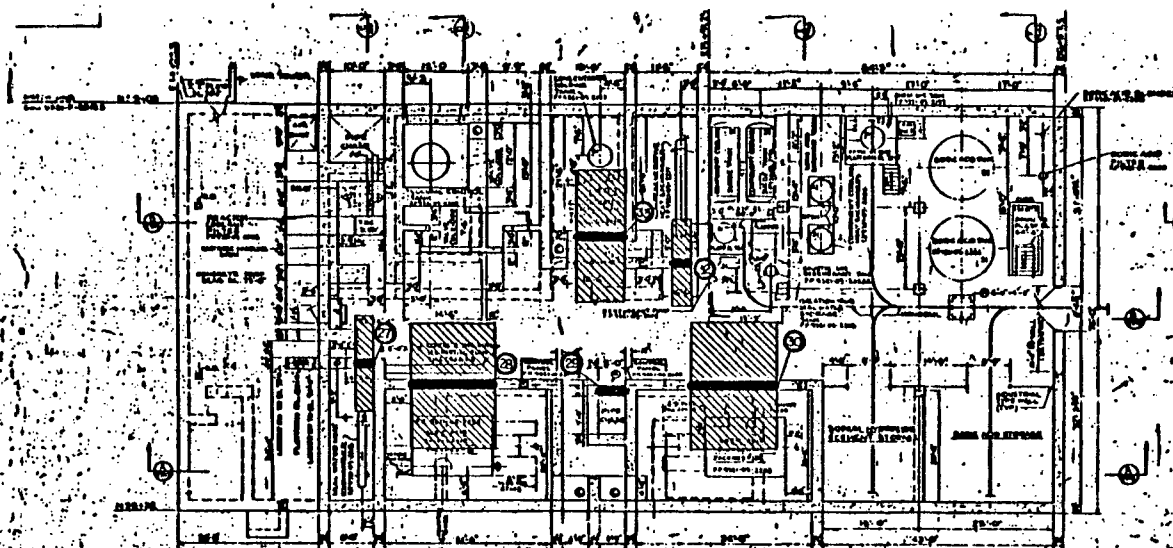
PLANS AT EL. 15'-0", 14'-0", 13'-0" & 12'-0"

CONSOLIDATED Edison COMPANY

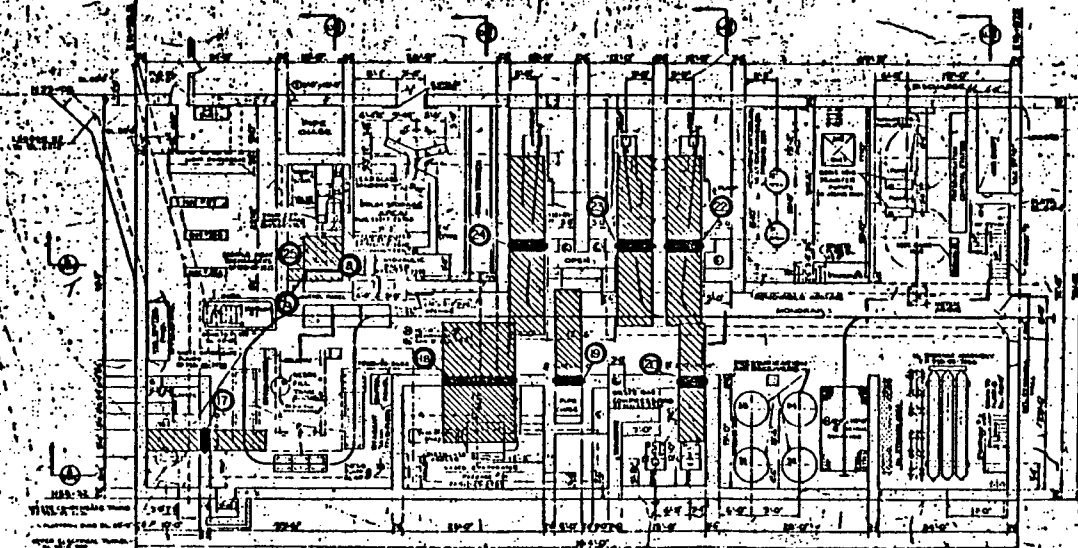
INDIAN POINT GENERATING STATION

Sheet No. 2

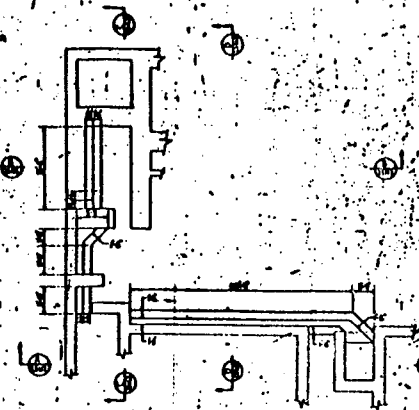
SCALE: AS SHOWN



PLAN OF 75'-0"



PLAN OF 55'-0"



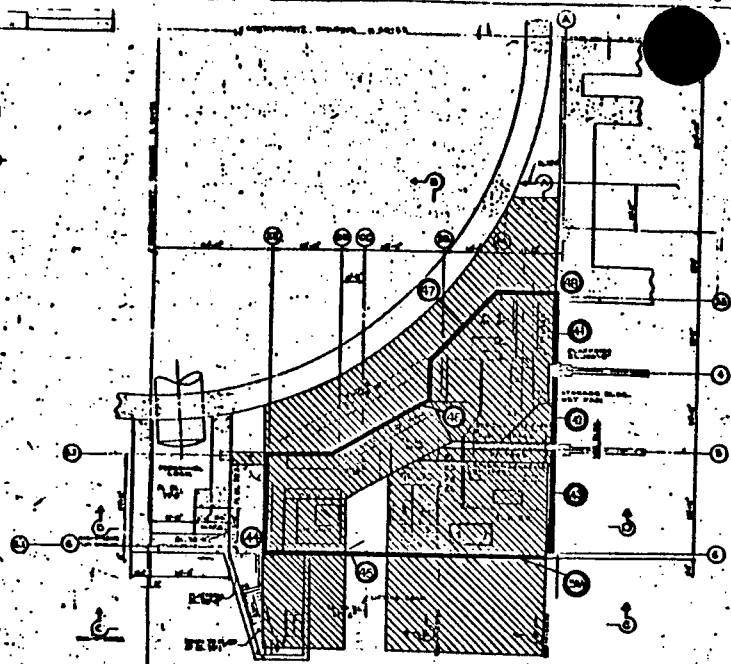
DETAIL OF STAIRS

NOTE:
FOR LOWER LEVEL PLANS, GENERAL
REFERENCE DRAWING CODE, S.E.C. 1
10-11-15-16-17

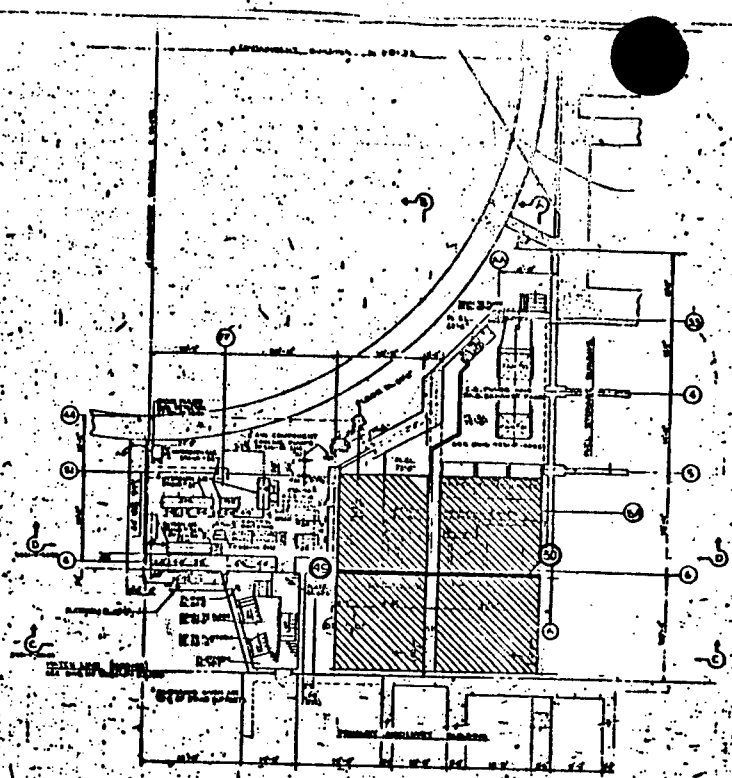
NO.	DESCRIPTION	DATE
1	REVISION	10-11-15-16-17
2	REVISION	10-11-15-16-17
3	REVISION	10-11-15-16-17
4	REVISION	10-11-15-16-17
5	REVISION	10-11-15-16-17
6	REVISION	10-11-15-16-17
7	REVISION	10-11-15-16-17
8	REVISION	10-11-15-16-17
9	REVISION	10-11-15-16-17
10	REVISION	10-11-15-16-17

MASONRY WALLS
6604.2ND SHT. NO. 2B

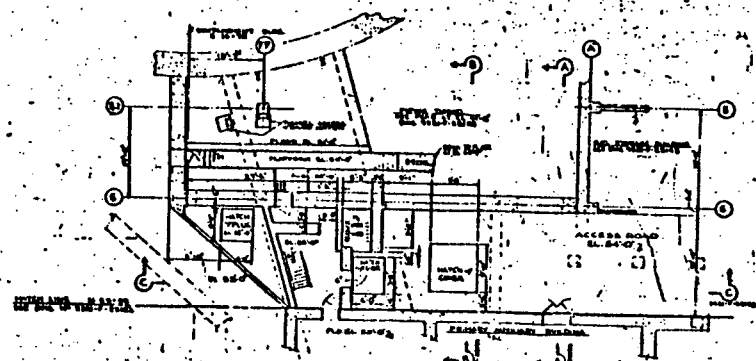
WESTINGHOUSE ELECTRIC CORP.
PRIMARY AUXILIARY BUILDING
GENERAL ARRANGEMENT
1 PLANS AT EL. 55'-0" & 75'-0"
CONSOLIDATED EDISON COMPANY
BIRMINGHAM GENERATING STATION
BIRMINGHAM, ALA.



PLAN AT ELEV. 32'-0"



PLAN AT ELEV. 32'-0"

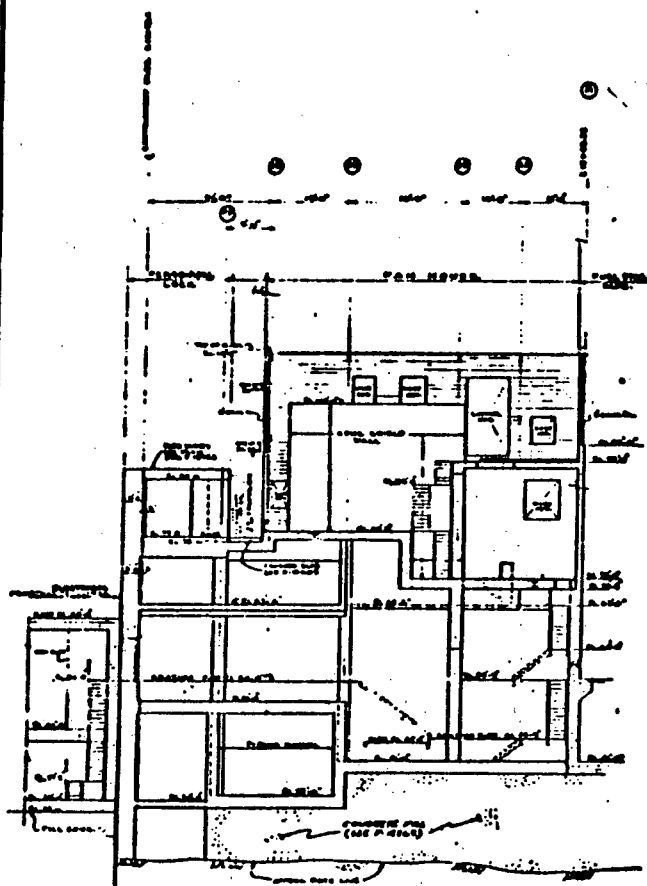


PLAN AT ELEV. 54'-0"

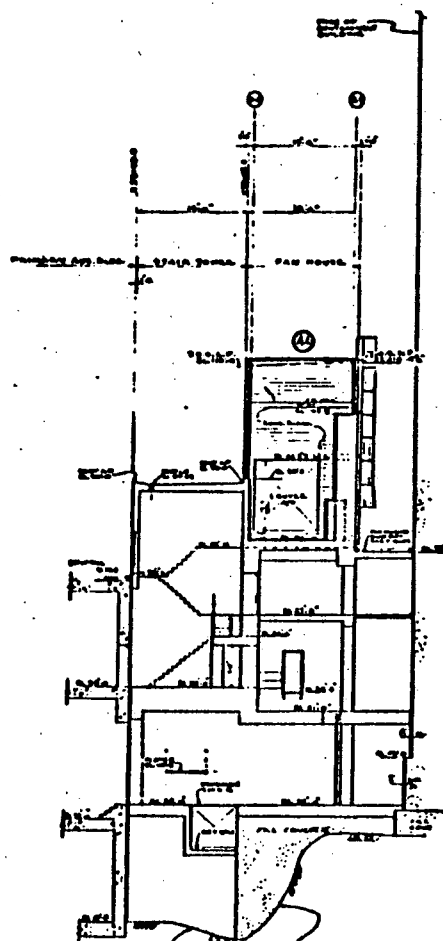
NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

MASONRY WALLS
6304.210
SHT. NO. 4A

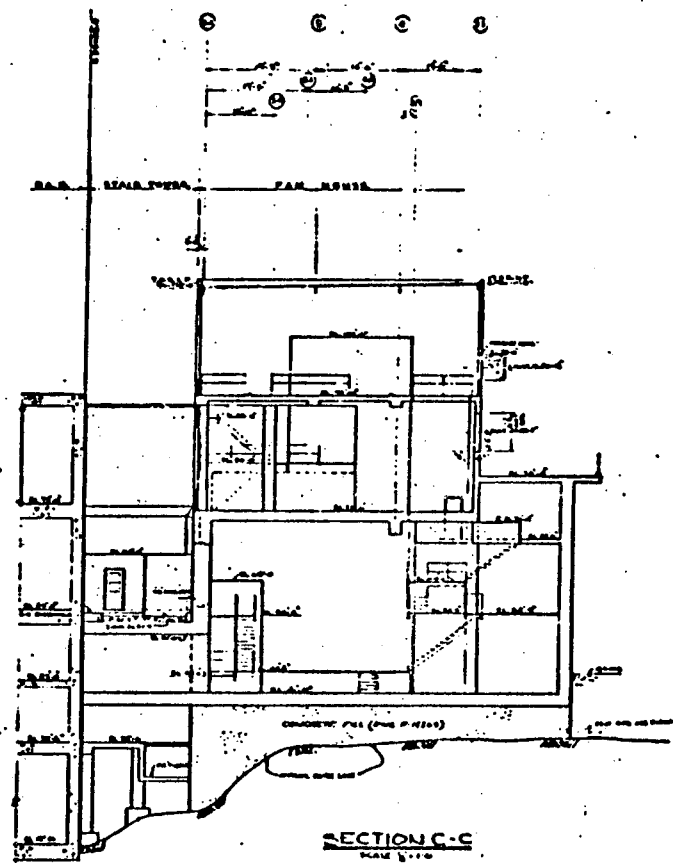
WESTINGHOUSE ELECTRIC CORPORATION
FAN ROOM
GENERAL ARRANGEMENT
PLANS
CONSOLIDATED EDISON COMPANY
NEWARK POWER GENERATING STATION
SHEET NO. 4A



SECTION A-A
SCALE 1/4" = 1'-0"



SECTION B-B
SCALE 1/4" = 1'-0"



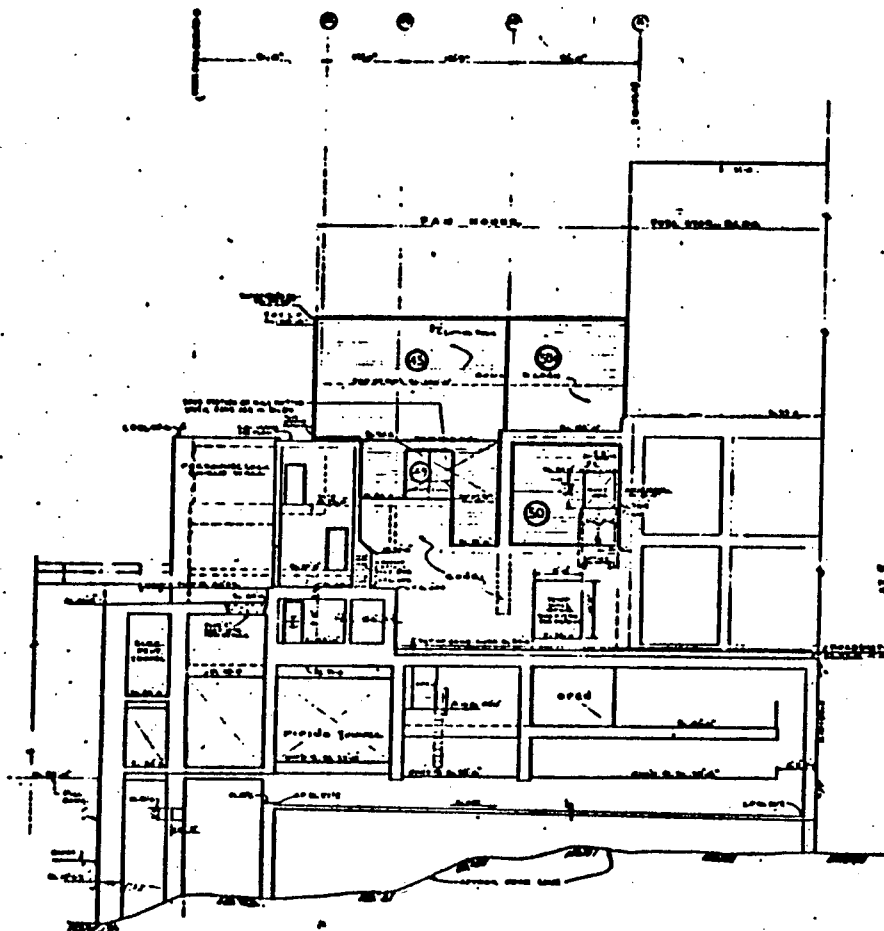
SECTION C-C
SCALE 1/4" = 1'-0"

MASONRY WALLS
6604.210
SHT. NO. 48

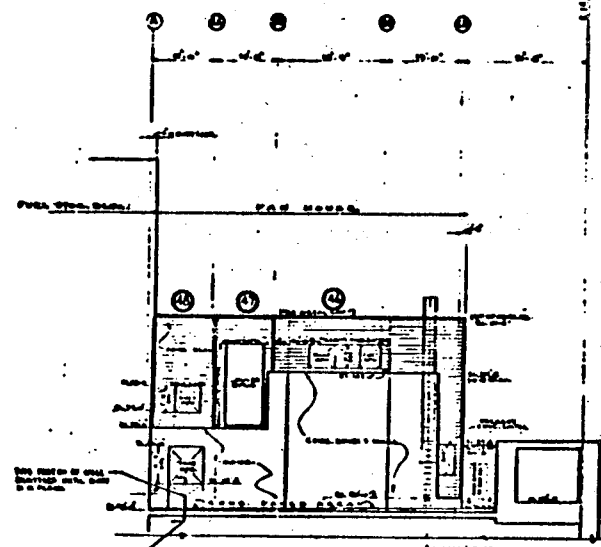
NOTE:
LOCATION OF SECTIONS SHOWN ON SHEET P-1000, 1001, 1002

SEE SHEET P-1000 FOR LIST OF REFERENCE DRAWINGS

WESTINGHOUSE ELECTRIC CORPORATION	
FAN HOUSE & PIPE PENETRATION AREA	
SECTIONS & DETAILS - SHEET NO. 1	
THE CONSOLIDATED EDISON COMPANY	
INDIAN POINT GENERATING STATION	
SHEET NO. 1	
SITE IN INDIANA	
DATE: 10-1-1933	BY: J. H. HARRIS
0321-1-10563-1	A-201681



SECTION D-D
 SCALE: 1/4" = 1'-0"
 NORTH ELEVATION OF THIS HOUSE
 APPROX. LOCATION OF SECTION SHOWN ON SHEET NO. 1 OF 1993, P. 1993 & P. 1995



SECTION E-E D-1993
 NORTH ELEVATION OF FAN HOUSE

MASONRY WALLS
 6604.210
 SHT. NO. 4C

SEE SHEET P. 1993 FOR LIST OF REFERENCE DRAWINGS

WESTINGHOUSE ELECTRIC CORPORATION									
FAN HOUSE & PIPE PENETRATION AREA									
SERVICES & DETAILS - SHEET NO. 2									
THE CONSOLIDATED EDISON COMPANY									
INDIAN POINT GENERATING STATION									
SHEET NO. 2									
WESTINGHOUSE & CONSOLIDATED EDISON CO.									
8321-F-13993 2					REVISED BY: A 201664				



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT

SYSTEM _____

SUBJECT MASONRY WALL No 7

DESIGN CLASSIFICATION _____

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH. KATZDATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 8

FINISHED BY _____

CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>11/15/80</u>			

GENERAL COMPUTATION SHEET



DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALL NO. 7

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM.		0	J KATZ	AIP
FINAL			DATE 6-5-80	DATE 8-3-80
VOID				
SHEET OF			DATE	DATE
J.O. 6604-210				

BUILDING: P.A.B.

ELEVATION: 15'-0

REFERENCE DWG.: 9321-F-11663

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT: 120 PCF

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONE

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: UNKNOWN

COMPRESSIVE STRENGTH f_m = SEE CRITERIA

MORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE: COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DUR-2-WALL EVERY OTHER JOINT

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): No

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: NONE

@ TOP: NONE @ LEFT SIDE: NONE

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: UNKNOWN

NOMINAL THICKNESS OF WALL: 2'-0

PERCENTAGE OF SOLID WALL: (Based on net + gross area): 100%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: YES RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 8'-0

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST



NAME OF COMPANY

PASNY

UNITS

MASONRY WALL SITE BULLETIN NO. 80-11

9321-F-25903

REF. DRAWINGS

F-25103

BUILDING PAB WALL NO 7

STEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
C		14" LINE # 653	-	-	YES	NO	YES	
"		14" VALVE # 735A	-	-	"	NO	YES	VALVE EXTENSION THRU WALL ONLY
"		14" LINE # 10	-	-	"	NO	YES	
"		14" VALVE # 735B	-	-	"	NO	YES	VALVE EXTENSION THRU WALL ONLY
"		8" LINE # 9	-	-	"	NO	YES	
"		8" VALVE # 739A	-	-	"	NO	YES	VALVE EXTENSION THRU WALL ONLY
"		8" LINE # 654	-	-	"	NO	YES	
"		8" VALVE # 739B	-	-	"	NO	YES	VALVE EXTENSION THRU WALL ONLY

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	PW	DB
FINAL			DATE 6-18-82	DATE 7-24-82
VOID				
SHEET 10	OF 2		DATE	DATE

DISCIPLINE



PASNY

UNIT/5

SUBJECT

MASONRY WALLS IE BULLETIN No. 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	S.C.	D.C.
FINAL		DATE	6-17-50	DATE: 7-21-50
VOID				
SHEET	2 OF 2	DATE		DATE
JO. 6604.210				

7

REF.

9321-F-30863

DRAWINGS

9321-F-30653

[illegible]



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL 7

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 8 OF 8

J.O. 6604. 2.15

REV

COMP. BY

CHK'D BY

0

V.M.

DMP

DATE

7/29/80

DATE

1/29/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $\frac{2}{3}$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $\frac{2}{3}$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

SUBJECT MASONRY WALL No 17

DESIGN CLASSIFICATION

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH KATZDATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 8

FINISHED BY _____ CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/4/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANYPASNYUNIT/S INP3SUBJECT MASONRY WALL NO. 17

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	<u>JKATZ</u>	<u>AIP</u>
FINAL			DATE <u>6-2-80</u>	DATE <u>10/2/80</u>
VOID				
SHEET	OF	1		
J.O. <u>6604-210</u>			DATE	DATE

BUILDING: P.A.B.ELEVATION: 55'-0REFERENCE DWG.: 9321-F-11693CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 150 PCFASTM STD C-140 REPORT: _____ YES: _____ NO.: XASTM STD C-476 REPORT: _____ YES: _____ NO.: XFACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONENOMINAL DIMENSIONS: HT.: 8" LENGTH: 16" THK. UNKNOWNCOMPRESSIVE STRENGTH f'_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO.: X

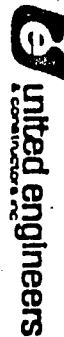
ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):H.D. DUB-O-WALL EVERY OTHER JOINTVERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: NONE@ TOP: NONE @ LEFT SIDE: NONEBOND TYPE: RUNNINGNUMBER OF WYTHES IN WALL UNIT: UNKNOWNNOMINAL THICKNESS OF WALL: 2'-0PERCENTAGE OF SOLID WALL: (Based on net ± gross area): 100 %BEARING WALL: No NON-BEARING WALL: YESFIRE WALL: YES RATING: _____RADIATION WALL: YES RATING: _____PRESSURE WALL: No MAX. LOAD: _____MISSILE WALL: No TYPE: _____IMPACT WALL: No TYPE: _____SEISMIC WALL: YES HEIGHT: 10'-0WIND LOADS: No MAX LOAD: _____TORNADO LOADS: No TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALLS I.E. BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	FWJ	JD
FINAL			DATE 6-17-80	DATE 7-17-80
VOID				
SHEET 1	OF 2		DATE	DATE
JO 6604.210				

 BUILDING PAB EL 55'-0" WALL NO 17 REF. 9321-F-25153
 DRAWINGS F-25733

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
JD	31 & 32	WASTE COND. TANKS			NO	NO	YES	
		BLDG. HEATING CONDENSATE RETURN LINE			NO	NO	YES	
	31 & 32	WASTE COND. PUMPS			NO	NO	YES	
		2" - # 425			NO	"	"	
		2" - # 257			NO	"	"	
		2" - # 258			NO	"	"	
		1" - # 261			NO	"	"	
		1" - # 255			NO	"	"	

 JD
 31 & 32
 2" - # 425
 2" - # 257
 2" - # 258
 1" - # 261
 1" - # 255


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

PROJECT TITLE

PASNY

DISCIPLINE

STRUCT.

SYSTEM

SUBJECT

MASONRY WALL No 17

DESIGN CLASSIFICATION

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 8 OF 8

J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

V.M.

AIP

DATE

10-4-80

DATE

10/6/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR DBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

SUBJECT MASONRY WALL No 18

DESIGN CLASSIFICATION

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH. KATZDATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 8

FINISHED BY

CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/4/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALL NO. 18

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	J. KATZ	AIP
FINAL			DATE 6-3-80	DATE 10-2-80
VOID				
SHEET	OF		DATE	DATE
JO 6604-210				

BUILDING: P.A.B.

ELEVATION: 55'-0

REFERENCE DWG.: 9321-F-11693

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 150 PCF

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONE

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: UNKNOWN

COMPRESSIVE STRENGTH f_m = SEE CRITERIA.MORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DUA-O-WALL EVERY OTHER JOINT

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: NONE

@ TOP: NONE @ LEFT SIDE: NONE

BOND TYPE: BUNDLING

NUMBER OF WYTHES IN WALL UNIT: UNKNOWN

NOMINAL THICKNESS OF WALL: 2'-6

PERCENTAGE OF SOLID WALL: (Based on net + gross area): 100%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: YES RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 11'-0

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS JNP3

SUBJECT

MASONRY WALLS I.E. BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	PW	DB
FINAL		DATE	DATE	DATE
VOID		6-17-80	7-17-80	
SHEET	1 OF 3	DATE		
JO 6604.210				

9321-F-25153

REF.

DRAWINGS F-25133

BUILDING PAB EL 55'-0" WALL NO 18

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
ND	31	WASTE EVAP. PACKAGE			YES	NO		
ND		VENT DUCT & SUPPORTS			NO	YES	NO	
ND		3/4" - #735			"	NO	YES	
ND		2" - #730			"	"	"	
ND		3/4" - #756			YES	"	"	
ND		3/4" - #757			"	"	"	
ND		1" - #130			"	"	"	
ND		2" - #454			"	"	"	
ND		3/4" - #529			NO	"	"	
ND		3" - #453			YES	"	"	
ND		1" - #312			NO	"	"	
ND		3/4" - #756			YES	"	"	
ND		2" - #581			"	"	"	
		STEAM SUPPLY				YES	NO	
		COND. RETURN				YES	NO	
		PIPE SUPPORT FOR STM & COND. LINES				YES	NO	

wt = 50#

DISCIPLINE)

GENERAL COMPUTATION SHEET

NAME OF
COMPANY

PASNY

UNITS

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	SC	Di
FINAL		DATE	6-17-80	DATE
VOID		DATE		DATE
SHEET 2 OF 3		DATE		
JO 6604.210		DATE		

9321-F-31093
9321-F-30333
9321-F-30823

REF.

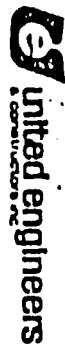
DRAWINGS 9321 F-30603

BUILDING P.A.B. EL. 55'-0" WALL NO 18

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE No	ITEM No	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		TERM. BOX	X73		X		X	
	5AM1/DC	3" C			X		X	FOR X73
	5AM2/DC	3" C			X		X	FOR X73
	5AM3/DC	3" C			X		X	FOR X73
	5FM/DC	1" C			X		X	FOR AAH1
	5FM/DC	1" C			X		X	FOR LCV-335
	5AK/FC	1" C			X		X	FOR AAH1
	5FS/JC	3/4" C			X		X	FOR TI3
		WASTE EVAP IMERSION HTR	RD2		X		X	
	TE-336	TEMP COUPLE	TI3		X		X	
	PCV-337	WASTE GAS EVAP.	WAO		X		X	
	LCV-327	WASTE GAS EVAP.	WBO		X		X	
	WEV-15	WASTE GAS EVAP.	WCO		X		X	
	WEV-12	" " "	WDO		X		X	
	WIEV-11	" " "	WEO		X		X	
	FCV-329	" " "	WFO		X		X	
	59-311-16	L76 FIXTURE					X	

(DISCIPLINE)

GENERAL COMPUTATION SHEET

NAME OF
COMPANY

PASNY

UNITS

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

9321-F-31093

9321-F-30333

9321-F-30823

REF.

DRAWINGS 9321-F-30603

BUILDING P.A.B. EL. 55'-0" WALL NO 18

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	WEV-17	WASTE GAS EVAP.	WGO		X		X	
		T.B. WTO WASTE EVAP	WTO		X		X	
	5FA/DC	1" CONDUIT			X		X	FOR PCV 337
	5FC/DC	1" CONDUIT			X		X	FOR WEV-15
	5GY/DC	1 1/4" CONDUIT			X		X	FOR WTO
	5FB/DC	1" CONDUIT			X		X	FOR WBO
	5FG/DC	1" CONDUIT			X		X	FOR FC-329
	5FF/DC	1" CONDUIT			X		X	FOR WEV-11
	5AL/FC	1" CONDUIT			X		X	RDL
	TRAY NO. 85G/FC	TRAY EL 67'-6"			X		X	
	85G/DC	TRAY EL 67'-6"			X		X	
	95G/FC	TRAY EL. 67'-6"			X		X	
	95G/DC	TRAY EL. 67'-6"			X		X	
	78G/FB	TRAY EL. 66'-0"			X		X	
	78G/DB	TRAY EL. 65'-0"			X		X	
	78G/DB	TRAY EL. 64'-0"			X		X	
		HIGH VOLTAGE						FIELD TRIP

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	SC	DC
FINAL			DATE 6-17-80	DATE 7-17-85
VOID			DATE	DATE
SHEET 3 OF 3		JO 6604.210		


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL No 18

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL ☒

VOID

SHEET 8 OF 8

J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

V.M.

AIP

DATE

DATE

10-2-83

10/2/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONG. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

OBJECT TITLE

PASNY

DISCIPLINE

STRUCT.

SYSTEM

SUBJECT

MASONRY WALL No 19

DESIGN CLASSIFICATION

STARTED BY

V. MEHTANI

DATE

AUTHORIZED BY

MR. JOSEPH KATZ

DATE

PROBLEM STATEMENT

ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & OBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS

8

DESIGNED BY

CHECKED BY

CHECKER

DESIGN SUPER

COGNIZANT ENG'R

DESIGN REVIEW

BY

DATE

AIP

10/4/80

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALL NO. 19

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM.		0	J KATZ	AIP
FINAL			DATE 6-4-80	DATE 7-4-80
VOID				
SHEET	OF		DATE	DATE
J.O. 6604-210				

BUILDING: P.A.B.

ELEVATION: 55'-0"

REFERENCE DWG.: 9321-F-11693

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 150 PCF

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONE

NOMINAL DIMENSIONS: HT.: 8" LENGTH: 16" THK. UNKNOWN

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DQR-0-WALL EVERY OTHER JT

VERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: NONE

@ TOP: NONE @ LEFT SIDE: NONE

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: UNKNOWN

NOMINAL THICKNESS OF WALL: 2 1/2"

PERCENTAGE OF SOLID WALL: (Based on net + gross area): 100%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: YES RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 16'-0"

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

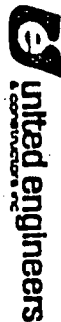
DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

United Engineers
& Constructors, Inc.NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	PW	DB
FINAL		DATE	6-17-80	DATE
VOID		DATE		DATE
SHEET	1 of 4	DATE		DATE
JO 6604.210				

9321-F-25153

9321-F-26833

BUILDING PABELSS'-0" WALL NO 19

REF.

DRAWINGS F-2573, F-25683, F-26713

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
PW		3/4" - #450			NO	NO	YES	
WD		1" - #255			NO			
CH		1" - #505			YES			
PW		2" - #118			YES			
WD		1" - #312			NO			
SI		1" - #314			YES			
AC		2" - #135			NO			
I		8" - #557			NO			
WD		1" - #134			YES			
WD		1" - #431			YES			
WD		1" - #191			NO			
CH		2" - #592			YES			
CH		1" - #124			YES			
WD		3/4" - #721			YES			
WD		2" - #263			YES			
WD		3/4" - #517			YES			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM			PW	DJ
FINAL		0	DATE 6-17-80	DATE 7-17-80
VOID			DATE	DATE
SHEET 2	OF 4			
JO. 6604.210				

BUILDING P.A.B. EL. 55'-0" WALL NO 19 REF. 9321-F-26833
DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
—		3" # 730			NO	NO	YES	
AC		4" # 453			YES	"	"	
AC		4" # 454			"	"	"	
AC		8" # 167			"	"	"	
AC		8" # 168			"	"	"	
CH		4" # 478			"	"	"	
CH/WD		2" # 106			"	"	"	
CH/WD		3/8" # 511			NO	"	"	
—		2" # 196			YES	"	"	
CH		1" # 505			"	"	"	
CH/WD		1" # 341			"	"	"	
CH		2" # 121			"	"	"	
WD		1" # 130			"	"	"	
WD		2" # 443			"	"	"	
H/WD		1" # 448			"	"	"	
—		4" # 675			NO	"	"	
H/WD		1" # 115			YES	"	"	
H/WD		1" # 105			"	"	"	
WD		2" # 527			"	"	"	
IV		3/8" # 539			"	"	"	
IV		3/8" # 540			"	"	"	
SI/WD		1" # 68			"	"	"	
WD		1" # 572			"	"	"	
PW		2" # 512			"	"	"	
WD/WD		3/4" # 521			"	"	"	

(DISCIPLINE)

GENERAL COMPUTATION SHEET

NAME OF
COMPANY

PASNY

UNITS JNP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	SC	DC
FINAL			DATE 6-18-80	DATE 7-17-80
VOID			DATE	DATE
SHEET 3	OF 4			
JO 6604.210				

BUILDING PAB EL. 55'-0" WALL NO 19 REF. DRAWINGS 9321-F-26833

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
WD		3/4" - # 429			YES	NO	YES	
WD		3/4" - # 757			"	"	"	
—		1 1/2" - # 677			NO	"	"	
CH/PW		2" - # 392			YES	"	"	
WD		1" - # 67			"	"	"	
CH/WD		TUBE BUNDLE LINES 108, 154, 160, 24, 30, 438			"	"	"	
CH/WD		2" - # 259			"	"	"	
CH		2" - # 459			"	"	"	
		BLDG. HEATING STEAM & CONDENSATE VENT DUCT			NO	NO	YES	
						NO	YES	

NOTE:

PIPING & VALVES ABOVE EL. 71'-0"
LISTED ON WALL # 29 MAY BE
COLLAPSED BY THIS WALL.



PASNY

UNITS

SUBJECT MASONRY WALLS IN BUILDING NO. 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	SC	SC
FINAL				
VOID				
SHEET	4 of 4		DATE	DATE
JO 6604.210				

REF.

DRAWINGS

9321-F-30823

9321-F-30603

59321-F-30333

[illegible]



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET OF

J.O. 6604. 210

REV

COMP. BY

CHK'D BY

0

V.M.

AIP

DATE

10-2-80

DATE

10-2-80

DATE

DATE

SYSTEM

SUBJECT MASONRY WALL No 19

DESIGN CLASSIFICATION

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION


united engineers & constructors inc.
CALCULATION CONTROL SHEET
CALC. SET NO.
PRELIM.
FINAL
VOID

✓

PROJECT TITLE PASNY **DISCIPLINE** STRUCT.
SYSTEM
SUBJECT MASONRY WALL No 20
DESIGN CLASSIFICATION
STARTED BY V. MEHTANI
DATE 8/4/80
AUTHORIZED BY MR. JOSEPH KATZ
DATE 8/2/80
PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)
DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE.

TOTAL NUMBER OF SET COMPUTATION SHEETS 8
FINISHED BY _____ **CHECKED BY** _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/4/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 20

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	J KATZ	AIP
FINAL			DATE 6-3-80	DATE 7-5-80
VOID				
SHEET	OF		DATE	DATE
JO 6604-210				

BUILDING: P.A.B.

ELEVATION: 55'-0"

REFERENCE DWG.: 9321-F-11693

CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 150 LBSASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONENOMINAL DIMENSIONS: HT.: 8" LENGTH: 16" THK. UNKNOWNCOMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):H.P. DUE-0-WALL EVERY OTHER JOINTVERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: NONE@ TOP: NONE @ LEFT SIDE: NONEBOND TYPE: RUNNINGNUMBER OF WYTHES IN WALL UNIT: UNKNOWNNOMINAL THICKNESS OF WALL: 2'-0"PERCENTAGE OF SOLID WALL: (Based on net + gross area): 100%BEARING WALL: NO NON-BEARING WALL: YESFIRE WALL: YES RATING: _____RADIATION WALL: YES RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 10'-0"WIND LOADS: NO MAX. LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT: MASONRY WALLS IE BULLETIN NO 80-11

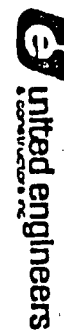
CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	DW	DE
FINAL			DATE 6-18-80	DATE 7-12-80
VOID			DATE	DATE
SHEET 1	OF 2			
JO. 6604.210				

 BUILDING PAB EL. 55'-0" WALL NO 20 REF. 9321-F-25153
 DRAWINGS F-25693

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
WD	32	WASTE GAS COMPR. & SEPER. PACKAGE			YES	NO	YES	
AC		2-# 615			"	NO	YES	

GENERAL COMPUTATION SHEET

DISCIPLINE



NAME OF COMPANY PASNY

UNITS

SUBJECT MASONRY WALLS I.E. BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	SC	D1
FINAL			DATE 2-16-80	DATE 7-16-83
VOID				
SHEET	2 of 2		DATE	DATE
JO 6604.210				

9321-F-31093-
9321-F-30333-
9321-F-30603-

REF. DRAWINGS 9321-F-30823-

BUILDING PAB, EL 55'-0" WALL NO 20

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		WASTE GAS COMPR. # 32	MB6		X		X	
16.1#	4LS/FC	1 1/4" CONDUIT			X	X		FOR MB6
		TERM. BOX	YG5		X		X	FOR MB6
	4ZZ/DC	1" CONDUIT			X		X	FOR YG5
	FAB/DC	2 1/2" CONDUIT			X		X	FOR YG5
	TRAY NO. 16G/JA	TRAY EL. 66'-3"						
	16G/FA	TRAY EL. 66'-3"						
	16G/DA	TRAY EL. 66'-3"						
	95G/FC	TRAY EL. 67'-6"						
	95G/DC	TRAY EL. 67'-6"						
	76G/JB	TRAY EL. 64'-0"						
	76G/FB	TRAY EL. 65'-0"						
	76G/DB	TRAY EL. 66'-0"						
	6-311-10P	LTC FIXTURE					X	
		DIST. PNL	FDZ					FIELD TRIP
		HIGH VOLTAGE LINES						FIELD TRIP
		CONDUIT LGS						FIELD TRIP


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL No 20

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 8 OF 8

 J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

V.M.

AIP

DATE

10/3/80

DATE

10/4/85

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION, PROBLEMS IN ENGINEERING" 4th EDITION,



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL No 22

DESIGN CLASSIFICATION _____

STARTED BY V. MEHTANIDATE 2/4/80AUTHORIZED BY MR. JOSEPH. KATZDATE 2/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 8

FINISHED BY _____

CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/4/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANYPASNYUNIT/S INP.3

SUBJECT

MASONRY WALL NO. 22

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	J KATE	AIP
FINAL			DATE 6-3-80	DATE 7-6-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: P.A.B.ELEVATION: 55'-0REFERENCE DWG.: 9321-F-11693CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 150 PCFASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONENOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: UNKNOWNCOMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): _____

H.D. DUR-O-WALL EVERY OTHER JOINTVERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: NONE@ TOP: NONE @ LEFT SIDE: NONEBOND TYPE: BUNDLINGNUMBER OF WYTHES IN WALL UNIT: UNKNOWNNOMINAL THICKNESS OF WALL: 2'-0PERCENTAGE OF SOLID WALL: (Based on net + gross area): 100%BEARING WALL: NO NON-BEARING WALL: YESFIRE WALL: YES RATING: _____RADIATION WALL: YES RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 15'-0WIND LOADS: NO MAX. LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP3

SUBJECT MASONRY WALLS IE BULLETIN N° 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	PUR	DB
FINAL			DATE 6-18-84	DATE 7-19-84
VOID				
SHEET	1 OF 2		DATE	DATE
JO 6604.210				

 BUILDING PAB EL. 55'-0" WALL N° 22 REF. 9321-F-25153
 DRAWINGS F-25713

SYSTEM	EQUIP. TAG N°	DESCRIPTION	NODE N°	ITEM N°	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
CH	33	CHARGING PUMP			YES	NO	YES	
AC		2" - # 403			"	"	"	
CH		3" - # 19			"	"	"	
CH		4" - # 200			"	"	"	
AC		2" - # 404			"	"	"	
CH		1" - # 802			"	"	"	
CH		1" - # 218			"	"	"	
CH		2" - # 208				YES	NO	
		VENT DUCT				NO	YES	
		SAMPLING SYSTEM						

p. 30#

PASNY

UNIT 5

MASONRY WALL SITE BUILDING NO. 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	SC	D. A.
FINAL		DATE	2-13-80	7-14-83
VOID				
SHEET	2 OF 2	DATE		DATE
JO. 6604.210				

9321 - F - 30823

59321-F-36603

BUILDING P.A.B. EL 55'-0" WALL NO 22

REF.

DRAWINGS

[illegible]


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

CALC. SET NO.

PRELIM.

FINAL

VOID

 SHEET 8 OF 8

 J.O. 6604.210

 R_E

COMP. BY

CHK'D BY

0

V.M.

DATE

10/3/80

DATE

10-1-80

DATE

DATE

SYSTEM

 SUBJECT MASONRY WALL No 22

DESIGN CLASSIFICATION

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR DBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

SUBJECT MASONRY WALL No 23

DESIGN CLASSIFICATION

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH KATZDATE 8/9/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE D.L. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 8

FINISHED BY _____ CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/4/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 23

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	J. Katz	GIP
FINAL			DATE 6-2-80	DATE 7-7-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: P.A.B.

ELEVATION: 55'-0

REFERENCE DWG.: 9321-F-11693

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 150 PCF

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONE

NOMINAL DIMENSIONS: HT.: 8" LENGTH: 16" THK.: UNKNOWN

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE: COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DWR-O-WALL EVERY OTHER JOINT

VERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: NONE

@ TOP: NONE @ LEFT SIDE: NONE

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: UNKNOWN

NOMINAL THICKNESS OF WALL: 2'-6

PERCENTAGE OF SOLID WALL: (Based on net + gross area): 100%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: YES RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 15'-6

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

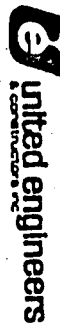
DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	PW	LE
FINAL			DATE 6-12-80	DATE 7-17-80
VOID			DATE	DATE
SHEET 10	OF 2			
JO 6604.210				

REF.

9321-F-25153

DRAWINGS

F-25713

BUILDING PAB WALL NO 23

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
CH	32	CHARGING PUMP			YES	NO	YES	
AC		2" # 403			"	"	"	
AC		2" # 404			"	"	"	
CH		3" # 19			"	"	"	
CH		1" # 801			"	"	"	
CH		1" # 220			"	"	"	
CH		2" # 212			"	"	"	
CH		3" # 214			"	"	"	
AC		1" # 641			"	"	"	
AC		1" # 639			"	"	"	
CH/NO		3/4" # 242			"	"	"	
		SAMPLING SYS.				NO	YES	


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL No 23

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 8 OF 8

J.O. 6604.210

 R_{EV}

COMP. BY

CHK'D BY

0

VM.

AIP

DATE

10/2/80

DATE

10/4/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $\frac{2}{3}$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $\frac{2}{3}$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION


united engineers & constructors inc.
CALCULATION CONTROL SHEET
CALC. SET NO.
PRELIM.
FINAL
VOID
PROJECT TITLE PASNY **DISCIPLINE** STRUCT.
SYSTEM
SUBJECT MASONRY WALL No 24
DESIGN CLASSIFICATION
STARTED BY V. MEHTANI
DATE 8/4/80
AUTHORIZED BY MR. JOSEPH KATZ
DATE 8/2/80
PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)
DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 8
FINISHED BY
CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>ALP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF COMPANY PASNY UNIT/S INP.3SUBJECT MASONRY WALL NO. 24

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	J. KATZ	AIP
FINAL			DATE 10.4.80	7/7/80
VOID				
SHEET OF			DATE	DATE
JO. 6604-210				

BUILDING: P.A.B. ELEVATION: 55'-0REFERENCE DWG.: 9321-F-11693CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 150 PCFASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: NONE WEB SHELL THICKNESS: NONENOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK UNKNOWNCOMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

ASTM STD C-270 TYPE _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): _____

H.D. DWR-O-WALL EVERY OTHER JOINTVERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: NONE@ TOP: NONE @ LEFT SIDE: NONE

BOND TYPE: _____

NUMBER OF WYTHES IN WALL UNIT: UNKNOWNNOMINAL THICKNESS OF WALL: 30"PERCENTAGE OF SOLID WALL: (Based on net + gross area): 100%BEARING WALL: NO NON-BEARING WALL: YESFIRE WALL: YES RATING: _____RADIATION WALL: YES RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 15'-6WIND LOADS: NO MAX LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

(DISCIPLINE)



GENERAL COMPUTATION SHEET

NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	PW	DE
FINAL			DATE 6-18-80	DATE 7-25-80
VOID				
SHEET	1 OF 2		DATE	DATE
JO 6604.210				

 BUILDING PAB WALL NO 24 REF. 9321-F-25153
 DRAWINGS F-25713

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE No	ITEM No	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
CH	31	CHARGING PUMP			YES	NO	YES	
AC		2" # 638			"	"	"	
AC		2" # 640			"	"	"	
CH		1" # 800			"	"	"	
AC		3" # 166			"	"	"	
AC		3" # 165			"	"	"	
		VENT DUCT						

PASNY

UNITS

SUBJECT MASONRY WALL SITE BULLETIN NO 80-11

PRELIM		REV	0	COMP BY	SC	CHK'D BY	DC
FINAL							
VOID					DATE 6-18-20		DATE 7-1-20
SHEET	2 OF 2						
J.O.	6604.210				DATE		DATE

REF.
DRAWINGS

9321-F-30823

69321-F-30603

[illegible]


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL No 24

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

 SHEET 8 OF 8

 J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

V.M.

DATE

10/2/80

DATE

10/2/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

SUBJECT MASONRY WALL No 46

DESIGN CLASSIFICATION

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH KATZDATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 6

FINISHED BY _____ CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>11/12/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 46

CALC. SET NO.		REV	COMP. BY	CHK'D BY
PRELIM.		0	JKAT2	AP
FINAL			DATE 6-3-80	DATE 7-10-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: FAN HOUSE ELEVATION: 102'0

REFERENCE DWG.: 9321-F-12153 & F-13993

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT: UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT.: 8" LENGTH: 16" THK.: 8"

COMPRESSIVE STRENGTH f'_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DUR-O-WALL EVERY TWO COURSES

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" C.M.U. WALL

@ TOP: ROOF FRAMING @ LEFT SIDE: 8" C.M.U. WALL

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net + gross area): 55%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: NO RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: TYPE:

SEISMIC WALL: YES HEIGHT: 9'-4

WIND LOADS: YES MAX. LOAD:

TORNADO LOADS: TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS JNP.3

SUBJECT MASONRY WALLS IE BULLETIN N° 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	Pw	D8
FINAL			DATE 6-19-80	DATE 7-20-80
VOID			DATE	DATE
SHEET 1	OF 4			
JO 6604.210				

FAN ROOM
BUILDING EL. 80'-0" WALL N° 46 REF. 9321-F-25183
DRAWINGS F-40333

SYSTEM	EQUIP. TAG N°	DESCRIPTION	NODE N°	ITEM N°	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		CONTAINMENT PURGE DUCTS & ISOLATION VALVES			YES	NO	YES	

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	SC	Dg
FINAL		DATE	6-20-08	DATE
VOID		DATE		DATE
SHEET 2 OF 4		DATE		
JO 6604.210		DATE		

9321-F-40343
 9321-F-40333
 9321-F-31593
 9321-F-30383

REF.

DRAWINGS

FAN HSE

BUILDING EL. 60'-0" & 92'-0" WALL NO 46

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		CTRL PNL	JC1		X		X	
		FCV 1171	ST3		X		X	
		FCV 1173	ST4		X		X	
		SOV-1278	VR3		X		X	
		SOV-1277	VR2		X		X	
		TER. BOX	XG6		X		X	
	7LW/DC	3/4" CONDUIT			X		X	FOR SOV-1278
	7LU/DC	2 1/2" CONDUIT			X		X	FOR FCV-1173
	7LV/DC	3/4" CONDUIT			X		X	FOR SOV-1277
	7LT/DC	2 1/2" CONDUIT			X		X	FOR FCV-1171
	FCV-1171		ST3		X		X	
	SOV 1277		VR2		X		X	
	7LY/DC	2 1/2" CONDUIT					X	FOR XG6
T=5#	K1-314-9	DUPLEX RECPT.				X		
	6HD/DC	2" CONDUIT			X		X	FOR JC1
	7UJ/DC	1 1/2" CONDUIT			X		X	FOR ZCS

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	PD
FINAL		DATE	DATE	DATE
VOID		DATE	DATE	DATE
SHEET 3 OF 4		DATE		
JO 6604.210		DATE		

9321-F-40343

9321-F-40333

9321-F-31593

REF.

DRAWINGS 9321-F-30303

FAN HSE

BUILDING FL. 80'-0" x 92'-0" WALL NO 46

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE No	ITEM No	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
T=20#	7UI/DC	1 1/2" CONDUIT			X	X		FOR ZC7
T=42#		ELECT. PULL BOX	ZC7		X	X		
T=42#		ELECT. PULL BOX	ZC8		X	X		
T=42#		ELECT. PULL BOX	ZC9		X	X		
		PRESS. SW.	KW2					PC-1295-S
		PRESS. SW.	KW3					PC-1296-S
		PRESS. SW.	KW4					PC-1297-S
		PRESS. SW.	KW5					PC-1298-S
		PRESS. SW.	KW6					PC-1299-S
		PRESS. SW.	KW7					PC-1300-S
		PRESS. SW.	KW8					PC-1301-S
		PRESS. SW.	KW9					PC-1302-S
T=12.3#	7UK/DD	1" CONDUIT			X	X		FOR ZC9
T=8.4#	7UL/DC	3/4" CONDUIT			X	X		FOR ZC7
T=12.3#	7UM/DC	1" CONDUIT			X	X		FOR ZC7
T=10.8#	7UN/DC	1" CONDUIT			X	X		FOR ZC7



united engineers
a constructor, inc.

NAME OF COMPANY

PASNY

UNITS IN P. 3

MASONRY WALL SITE BULLETIN NO. 80-111

PRELIM	REV	COMP BY	CHKD BY
FINAL	0	SC	SC
VOID	DATE	6-20-80	7-20-80
SHEET	DATE		DATE
4 of 4			
JO 6604.210			

9321-F-40343
9321-F-40333
9321-F-31593

9321-F-30 3A3

FAN HSA
BUILDING EL 80'-0" & 92'-0" WALL NO 46

REF.

DRAWINGS

[illegible]



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL. No 46

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 6 OF 6

J.O. 6604.210

R_E

COMP. BY

CHK'D BY

0

V.H.
DATE
9-18-90

AIP
DATE
10/30/80

DATE

DATE

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE LOADING IN TENSION IS 42.8 PSI OBE SEISMIC IS 2/3 DBE, NO CALCULATIONS PREPARED FOR OBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL ACCELERATION @ 2/3 HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES


united engineers & constructors inc.
CALCULATION CONTROL SHEET
CALC. SET NO.
PRELIM.
FINAL
VOID
PROJECT TITLE
PASNY
DISCIPLINE
STRUCT.
SYSTEM
SUBJECT
MASONRY WALL No 51A
DESIGN CLASSIFICATION
STARTED BY
V. MEHTANI
DATE
8/4/20
AUTHORIZED BY
MR. JOSEPH. KATZ
DATE
8/2/80
PROBLEM STATEMENT
ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)
DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS
3
FINISHED BY
CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP3

SUBJECT

MASONRY WALL NO. 512

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	JKP2	ALP
FINAL			DATE 6-7-80	DATE 7-12-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: CONTROL BLDG ELEVATION: 15'0

REFERENCE DWG.: 9321-F-30523 & F-13803

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT: UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: WEB SHELL THICKNESS:

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE: COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DWR-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" CH.W WALL

@ TOP: ROOF SLAB @ LEFT SIDE: DOVE TAILS

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%

BEARING WALL: YES NON-BEARING WALL: NO

FIRE WALL: YES RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 10'0

WIND LOADS: NO MAX LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

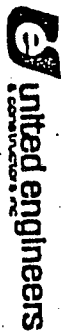
DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS JNP3

SUBJECT

MASONRY WALLS IE BULLETIN No 80-11

CALC SET NO.		REV	COMP BY	CHND BY
PRELIM		0	PW	DC
FINAL			DATE 6-17-80	DATE 7-14-80
VOID				
SHEET	1	OF	2	DATE
JO 6604.210				

 BUILDING CONTROL BLDG. WALL NO 51A & 51B REF. 9321-F-30523 DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		DELUGE STATION						


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL 51A

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

 SHEET 3 OF 3

 J.O. 6604.210

REV. COMP. BY CHK'D BY

0 V.M. AIP

DATE 9-18-80 DATE 10/3/80

DATE DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $\frac{2}{3}$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $\frac{2}{3}$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION


united engineers & constructors inc.
CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

✓

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL No 52A

DESIGN CLASSIFICATION _____

STARTED BY V. MEHTANI

DATE

8/4/80AUTHORIZED BY MR. JOSEPH KATZ

DATE

8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 4

FINISHED BY _____

CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANYPASNYUNIT/S INP.3

SUBJECT

MASONRY WALL NO. 52 Q

CALC. SET NO		REV	COMP. BY	CHK'D BY
PRELIM		0	<u>JKATZ</u>	<u>AIP</u>
FINAL			DATE <u>6-9-80</u>	DATE <u>8-1-85</u>
VOID				
SHEET OF			DATE	DATE
JO <u>6604.21a</u>				

BUILDING: CONTROL BLDGELEVATION: 33'-0REFERENCE DWG.: 9321-F-30523 & F-13803CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT: UNKNOWNASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWNNOMINAL DIMENSIONS: HT: 2" LENGTH: 16" THK: 8"COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

ASTM STD C-270 TYPE _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): _____

H.D. DUO-O-WALLVERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: DOVE TAILS@ TOP: ROOF SLAB @ LEFT SIDE: 8" C.M.L. WALLBOND TYPE: RUNNINGNUMBER OF WYTHES IN WALL UNIT: ONE (1)NOMINAL THICKNESS OF WALL: 2"PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%BEARING WALL: YES NON-BEARING WALL: NOFIRE WALL: YES RATING: _____RADIATION WALL: NO RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 11'-4WIND LOADS: NO MAX. LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALL SITE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	PW	DB
FINAL			DATE 6.18.80	DATE 9.20.80
VOID				
SHEET	1	OF	1	
JO 6604.210			DATE	DATE

CONTROL BLDG
BUILDING EL 33'-0"

WALL NO 52 A

REF.
DRAWINGS

9321-F-30523

F-21053

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	-	CLOSED COOL. WATER HD TANK			NO	NO	YES	


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**
CALC. SET NO.
PRELIM.
FINAL
VOID
SHEET 4 OF 4
J.O. 6604.210
REV
COMP. BY
CHK'D BY
0
V.M.
AIP
DATE
10/30/80
DATE
10/21/80
DATE
DATE
PROJECT TITLE
PASNY
DISCIPLINE
STRUCT.
SYSTEM
SUBJECT
MASONRY WALL No 52A
DESIGN CLASSIFICATION
SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

SUBJECT MASONRY WALL No 52B

DESIGN CLASSIFICATION

STARTED BY V. MEHTANIDATE 8/4/20AUTHORIZED BY MR. JOSEPH. KATZDATE 8/2/20

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & OBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 4

FINISHED BY

CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/30/20</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANYPASNYUNIT/S INP.3

SUBJECT

MASONRY WALL NO. 52b

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	<u>J. KATZ</u>	<u>AIP</u>
FINAL			DATE <u>6-7-80</u>	DATE <u>7-11-80</u>
VOID				
SHEET	OF		DATE	DATE
J.O.	<u>6004-210</u>			

BUILDING: COURTCL BLDG ELEVATION: 33'0REFERENCE DWG.: 9321-F.30523 & F.13803CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN

ASTM STD C-140 REPORT: _____ YES: _____ NO: _____

ASTM STD C-476 REPORT: _____ YES: _____ NO: _____

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWNNOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: _____ YES: _____ NO: _____

ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

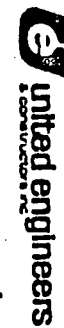
ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): _____

H. D. DUR-O-WALLVERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): POUFSHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: MOVE @ RIGHT SIDE: 8" CHLW WALL@ TOP: ROOF SCAB @ LEFT SIDE: 2" CHLW WALLBOND TYPE: RUNNINGNUMBER OF WYTHES IN WALL UNIT: ONE (1)NOMINAL THICKNESS OF WALL: 8"PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%BEARING WALL: YES NON-BEARING WALL: NOFIRE WALL: YES RATING: _____RADIATION WALL: NO RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 11-4WIND LOADS: NO MAX. LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)



NAME OF COMPANY

PASNY

UNITS

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	DC
FINAL		DATE	6-22-80	DATE
VOID		DATE		DATE
SHEET	1 OF 4	DATE		DATE
JO 6604.210				

9321-F-31453
9321-F-31483
9321-F-30393
9321-F-31493
9321-F-30893
9321-F-30593

BUILDING CTRL BLDG
EL. 33'-0"

WALL NO 52 B

REF. DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
t=180#		SOLATRON XFMR	BF8		X	X		7.5 KVA SOLATRON XFMR 32
t=200#		STEPDOWN XFMR	BC2		X	X		15 KVA STEP DN XFMR #32
t=180#		SOLATRON XFMR	BF7		X	X		
t=180#		STEPDOWN XFMR	BC1		X	X		
t=240#		D.C. PWR PNL #31	PC1		X	X		
t=240#		D.C. PWR PNL #32	PC2		X	X		
t=80#		FUSE BOX #31	WV7		X	X		
t=80#		FUSE BOX #32	WV8		X	X		
t=150#		TRANSF. SW. #33	KB3		X	X		
t=60#		L79 PNL #39	PB1			X		
t=60#		L79 PNL #319	PH1			X		
		BATTERY RACK #31	GE1		X			
		BATTERY RACK #32	GE2		X			
		STATIC INVERT. #31	GD1		X		X	
		BATT CHARGER #31	GE3		X		X	
		STATIC INVERT. #32	GD2		X		X	

GENERAL COMPUTATION SHEET

(DISCIPLINE)


United engineers
INCORPORATED
NAME OF
COMPANY

PASNY

UNITS INP.3

SUBJECT

MASONRY WALLS I.E. BULLETIN NO. 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	DC
FINAL		DATE	6-23-80	DATE
VOID		DATE		DATE
SHEET	2 OF 4	DATE		DATE
JO 6604.210				

9321-F-31453
 9321-F-31393
 9321-F-30593
 9321-F-30893
 9321-F-31483

BUILDING CTRL BLD'G
EL. 33'-0"WALL NO 52 BREF.
DRAWINGS9321-F-31493

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		BATTICHER #32	GE4		X		X	
<u>t=30#</u>		LTG PNL #30	PB7			X		
	TRAY 140. 12L/JD	TRAY EL. 43'-10"			X		X	
	12L/DD	42'-10"			X		X	
	12L/FD	41'-10"			X		X	
	13L/JD	43'-10"			X		X	
	13L/DD	42'-10"			X		X	
	13L/FD	41'-10"			X		X	
	14L/JD	43'-10"			X		X	
	14L/DD	42'-10"			X		X	
	14L/FD	41'-10"			X		X	
	15L/JD	43'-10"			X		X	
	15L/DD	42'-10"			X		X	
	15L/FD	41'-10"			X		X	
<u>16.1#</u>	1YS/FD	1 1/2" CONDUIT			X	X		FOR BFB
<u>=16.1#</u>	1ZR/FC	1 1/2" CONDUIT			X	X		FOR BFB
<u>16.1#</u>	1YZ/FD	1" CONDUIT			X	X		FOR BCI

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS INP3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

9321-F-30393
 9321-F-30893
 9321-F-31483
 9321-F-31493

C7RL BLDG
 BUILDING EL. 33'-0"

WALL NO 52B

REF.
DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	TRAY NR 16L/3D	TRAY EL. 43'-10"			X		X	
	16L/DD	42'-10"			X		X	
	16L/FD	41'-10"			X		X	
	17L/	43'-10"			X		X	
	17L/	42'-10"			X		X	
	17L/	41'-10"			X		X	
	18L/	43'-10"			X		X	
	18L/	42'-10"			X		X	
	18L/	41'-10"			X		X	
26.6#	1KW/DA	2" CONDUIT			X	X		FOR PCI
12.3#	5UC1/FA	1" CONDUIT			X	X		FOR PCI
26.6#	1KV/FD	2" CONDUIT			X	X		FOR PC2
26.6#	1IB/DA	2" CONDUIT			X	X		FOR PC2
16.1#	1YN/FB	1 1/2" CONDUIT			X	X		FOR KB3
20#	1NH/FD	1 1/2" CONDUIT			X	X		FOR KB3
12.3#	GJT/	1" CONDUIT			X	X		FOR PHI
10.0#	1NT/FA	2" CONDUIT			X	X		PHI

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	DCI
FINAL		DATE	DATE	DATE
VOID		6-23-80	7/20/80	
SHEET	3 OF 4	DATE	DATE	DATE
JO	6604.210			

(DISCIPLINE)



united engineers
a construction inc.

NAME OF COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS IE BULLETIN No 80-II

CALC. SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	JSC
FINAL				
VOID			DATE 6-24-80	DATE 7-1-80
SHEET	4 of 4		DATE	DATE
JO 6604.210				

9321-F-31483
9321-F-30563

9321-F-30563

9324-F-30397

REF.

DRAWINGS

CTRL BLD'G

BUILDING EL. 33'-0"

WALL N° 52 B

[illegible]



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL.

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL ☒

VOID

SHEET 4 OF 4

J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

VH.

AIP

DATE
3-18-90

DATE
10/20/20

DATE

DATE

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE LOADING IN TENSION IS 27.64 PSI DBE SEISMIC IS 2/3 DBE, NO CALCULATIONS PREPARED FOR DBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL ACCELERATION @ 2/3 HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES


united engineers & constructors inc.
CALCULATION CONTROL SHEET
CALC. SET NO.
PRELIM.
FINAL
VOID
PROJECT TITLE
PASNY
DISCIPLINE
STRUCT.
SYSTEM
SUBJECT
MASONRY WALL No 52C
DESIGN CLASSIFICATION
STARTED BY
V. MEHTANI
DATE
8/4/80
AUTHORIZED BY
MR.
JOSEPH KATZ
DATE
8/2/80
PROBLEM STATEMENT
ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)
DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS
2
FINISHED BY
CHECKED BY
CHECKER
DESIGN SUPER
COGNIZANT ENG'R
DESIGN REVIEW
BY
AIP
DATE
10/2/80

GENERAL COMPUTATION SHEET

DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 52C

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	J KATZ	KIP
FINAL			DATE 6-7-80	DATE 7-11-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: CONTROL BLDG ELEVATION: 33'0

REFERENCE DWG.: 9321-F-30523 & F-13803

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT.: 10.1 lbs

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DWR-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: DOVE TAILS

@ TOP: ROOF SLAB @ LEFT SIDE: 8" C.F.I.W WALL

BOND TYPE: RUNNING BOND

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%

BEARING WALL: YES NON-BEARING WALL: NO

FIRE WALL: YES RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 11'-4"

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST



NAME OF COMPANY

PASNY

UNIT/5

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	DA
FINAL			DATE 6-24-80	DATE 7-23-80
VOID				
SHEET	OF		DATE	DATE
JO. 6604.210				

BUILDING CTRL BLD'G
EL. 33' 0"

WALL N° 52C

REF.

DRAWINGS

9321-F-30893

9321-F- 30393

[illegible]



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL. NO. 52C

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL ☒

VOID

SHEET 2 OF 2

J.O. 6604.210

R_{EV}

COMP. BY

CHK'D BY

0

V.H.

AIP

DATE
9-18-90

DATE
10/30/89

DATE

DATE

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE LOADING IN TENSION IS 42 PSI. OBE SEISMIC IS 2/3 DBE, NO CALCULATIONS PREPARED FOR OBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL ACCELERATION @ 2/3 HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACT 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACT 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES


united engineers & constructors inc.
CALCULATION CONTROL SHEET
CALC. SET NO.
PRELIM.
FINAL
VOID

✓

PROJECT TITLE

PASNY

DISCIPLINE

STRUCT

SYSTEM

SUBJECT

MASONRY WALL No 52D

DESIGN CLASSIFICATION

STARTED BY

V. MEHTANI

DATE

8/4/80

AUTHORIZED BY

MR. JOSEPH KATZ

DATE

8/2/80

PROBLEM STATEMENT

ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS

4

FINISHED BY

CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	ALP			
DATE	10/30/80			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 52d

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM			JVATZ	AIP
FINAL			DATE 6-7-80	DATE 7-15-80
VOID				
SHEET	OF		DATE	DATE
JO 6604-210				

BUILDING: CONTROL BLDG ELEVATION: 33'0

REFERENCE DWG.: 9321-F-30523 & F-13803

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT: UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE: COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DUC-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" C.M.U WALLS

@ TOP: ROOF SLAB @ LEFT SIDE: DOVETAILS

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%

BEARING WALL: YES NON-BEARING WALL: No

FIRE WALL: YES RATING:

RADIATION WALL: No RATING:

PRESSURE WALL: No MAX. LOAD:

MISSILE WALL: No TYPE:

IMPACT WALL: No TYPE:

SEISMIC WALL: YES HEIGHT: 11'-4

WIND LOADS: No MAX. LOAD:

TORNADO LOADS: No TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: NO: X

DESCRIBE:

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE:

SEE ATTACHED LIST



united engineers
a constructor inc

NAME OF COMPANY

PASNY

UNIT/5 INP.3

SUBJECT

MASONRY WALLS I.E. BULLETIN № 80-II

PRELIM		REV	COMP BY	CHK'D BY
FINAL		0	SC	D41
VOID			DATE (6-24-80)	DATE 7-20-80
SHEET	1 OF		DATE	DATE
JO 6604.210				

BUILDING CTAL BLDG
FL. 33'-0"

WALL N° 52D

REF.
DRAWINGS

9321-F-31493
9321-F-30893
9321-F-30393

[illegible]


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

PROJECT TITLE

PASNY

DISCIPLINE

STRUCT.

SYSTEM

SUBJECT

MASONRY WALL No 52D

DESIGN CLASSIFICATION

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 4 OF 4

J.O. 6604. 7.1.1

REV

COMP. BY

CHK'D BY

0

V.M.

AID

DATE

DATE

10/31/80

10/31/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESS. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION


united engineers & constructors inc.
CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

✓

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

 SUBJECT MASONRY WALL No 53A

DESIGN CLASSIFICATION

 STARTED BY V. MEHTANI

 DATE 8/4/80

 AUTHORIZED BY MR. JOSEPH KATZ

 DATE 8/2/80

 PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & ORE)
DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

 TOTAL NUMBER OF SET COMPUTATION SHEETS 6

FINISHED BY

CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>ALP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)



NAME OF COMPANY PASNY UNIT/S INP.3

SUBJECT MASONRY WALL NO. 53a

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	J. KA.2	AIP
FINAL			DATE 6-11-80	DATE 7-19-80
VOID				
SHEET OF			DATE	DATE
JO 10604-210				

BUILDING: CONTROL BLDG ELEVATION: 15'0

REFERENCE DWG.: 9321-F.30523 & F.13803

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT: UNKNOWN
ASTM STD C-140 REPORT: _____ YES: _____ NO: X
ASTM STD C-476 REPORT: _____ YES: _____ NO: X
FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN
NOMINAL DIMENSIONS: HT: 2" LENGTH: 16" THK: 8"
COMPRESSIVE STRENGTH f_m = SEE CRITERIA
MORTAR/GROUT

ASTM STD C-91 REPORT: _____ YES: _____ NO: X
ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____
ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):
H.D. DWR-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): DOVE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" C.H.U. WALL
@ TOP: DOVE @ LEFT SIDE: DOVE TAILS
BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)
NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING: _____

RADIATION WALL: NO RATING: _____

PRESSURE WALL: NO MAX. LOAD: _____

MISSILE WALL: NO TYPE: _____

IMPACT WALL: NO TYPE: _____

SEISMIC WALL: YES HEIGHT: 16'0 INCL CORE BH

WIND LOADS: NO MAX LOAD: _____

TORNADO LOADS: NO TYPE: _____

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS JNP.3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	PW	DB
FINAL			DATE 6-18-20	DATE 7-20-20
VOID			DATE	DATE
SHEET 1	OF 3		DATE	DATE
JO 6604.210				

01321-F-30523

REF.
DRAWINGS

CONTROL

BUILDING EL. 15'-0" WALL NO S3A

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	-	CONDENS. RECEIVER			NO	NO	YES	
UT=150#/SUPPORT		VENT DUCT				YES	NO	

GENERAL COMPUTATION SHEET



(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

9321-F-30393-12

9321-F-30893-31

9321-F-32673-2

REF.

DRAWINGS

BUILDING CTRL BLD'G
EL. 15'0"

WALL NO 53 A

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		FILTER FAN #31	M95		X		X	
		FILTER FAN #32	M96		X		X	AIR COND. EQUIP. RM. FAN UNIT #32
	55N/FB	1" C			X		X	FOR M95
	55P/FA	1" C			X		X	FOR M96
100#		CTRL PNL	PI7		X	X		
20#		PULL BOX	W04		X	X		A/C EQUIP RM,
5#		THERMO.	TH8		X	X		A.C. EQUIP. RM EX FAN
20#		A.C. SOL. PNL	RH5		X	X		
85#		ELECT. HTR #18				X		
		TERM. BOX	WK4		X		X	A/C UNIT
		TERM. BOX	WK5		X		X	A/C UNIT
		TERM. BOX	WK6		X		X	A/C UNIT
	55H/DA	1 1/4" CONDUIT			X		X	FOR PI7
	55D/DB	1 1/4" CONDUIT			X		X	FOR PI7
	55K/DE	2" CONDUIT			X		X	FOR PI7
	55A/DB	3" CONDUIT			X		X	FOR PI7

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	SC	24
FINAL		DATE	DATE	DATE
VOID		DATE	DATE	DATE
SHEET	2 OF 3	DATE	DATE	DATE
JO 6604.210				

GENERAL COMPUTATION SHEET

(DISCIPLINE)



NAME OF COMPANY

PASNY

UNITS

SUBJECT

MASONRY WALLS I.E. BULLETIN NO. 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	D-4
FINAL		DATE	DATE	DATE
VOID		6-24-80	7-29-80	
SHEET	3 OF 3	DATE	DATE	DATE
JO	6604.210			

9321-F-30393-12

9321-F-30893-31

9321-F-32673-2

REF.

DRAWINGS

CTRL BLD'G

FL. 15'-0"

WALL NO

53A

BUILDING

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	5SM/DA	1" CONDUIT				X	X	FOR PJ8
	5SC1/DB	2" C					X	FOR PI8
	5SC2/DB	1 1/2" C					X	FOR PI8
	5SS1/DB	2" C					X	FOR PJ8
	5SG/DB	1 1/4" C					X	FOR WK6
	5RN/DD	1" C					X	FOR TH8
	5SF/DA	1 1/4" C					X	FOR WK5
20th		COND. PU 35A B	PT4		X		X	
20th		COND. PU 35A-B MECH. ALT.	LF9		X		X	
20th		COND. RET. PU 35B	MN7		X		X	
20th		COND. PU 35A	MN3		X		X	
		AIR COND UNIT #31	PI8				X	STR. CAB,
		AIR COND. UNIT #32	PJ8				X	STR. PNL



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL No 53A

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM:

FINAL

VOID

SHEET 6 OF 6

J.O. 6604.210

REV COMP. BY CHK'D BY

0 V.M. AIP
DATE 10/30/80 DATE 10/30/80

DATE DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESS. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT

CALC. SET NO.

PRELIM.

FINAL

VOID

SYSTEM

SUBJECT MASONRY WALL No 53B

DESIGN CLASSIFICATION

STARTED BY V. MEHTANI

DATE 8/4/80

AUTHORIZED BY MR. JOSEPH KATZ

DATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL.
- 5) SSE IS EQUIVALENT TO DBE.

TOTAL NUMBER OF SET COMPUTATION SHEETS 4

FINISHED BY

CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 53b

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	JK72	ALP
FINAL			DATE 6-7-10	DATE 7-11-8
VOID				
SHEET	OF			
J.O	6004-210		DATE	DATE

BUILDING: CONTROL BLDG

ELEVATION: 15'0

REFERENCE DWG.: 9321-F-30523 & F-13803

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 2"

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.D. DWR-O-WALL

VERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): DOWEL

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: DOWEL @ RIGHT SIDE: DOVE TAILS

@ TOP: DOWEL @ LEFT SIDE: 8" C.H.U. WALL

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL:

PERCENTAGE OF SOLID WALL: (Based on net + gross area): 55%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 16'0 INCL CONC B/L

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

United engineers
& constructors inc.NAME OF
COMPANY

PASNY

UNITS JNP.3

SUBJECT

MASONRY WALLS IE BULLETIN NO. 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	PW	DB
FINAL			DATE 6-17-80	DATE 7-23-80
VOID				
SHEET	OF		DATE	DATE
6604.210	2			

REF.
DRAWINGS

9321-F-30523

BUILDING CONTROL BLDG. WALL NO
EL. 1510"

53B

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		CONDENSATE RECEIVER			NO	NO	YES	
150#	/SUPPORT	VENT DUCT				YES	NO	



NAME OF COMPANY

PASNY

UNITS

SUBJECT

MASONRY WALLS ISTE BULLETIN No. 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	D4
FINAL				
VOID				
SHEET	2 OF 2			
JO 6604.210		DATE	DATE	DATE
		6-25-80	7-20-80	1

9321-F-30393-

9321-F-30893

6. 9321-F-32673

REF.

DRAWINGS

CTRL BLD'G

BUILDING EL. 15'-0"

WALL N°

53 B

[illegible]


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

PROJECT TITLE

PASNY

DISCIPLINE

STRUCT.

SYSTEM

SUBJECT

MASONRY WALL No 53B

DESIGN CLASSIFICATION

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 4 OF 4

J.O. 6604. 210

REV

COMP. BY

CHK'D BY

0

V.M.

AIP

DATE

10/20/80

DATE

10/20/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $\frac{2}{3}$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $\frac{2}{3}$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION


united engineers & constructors inc.

CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL 54

DESIGN CLASSIFICATION _____

 STARTED BY V. MEHTANI

DATE

8/4/80

 AUTHORIZED BY MR. JOSEPH KATZ

DATE

8/2/80

 PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)
DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

 TOTAL NUMBER OF SET COMPUTATION SHEETS 5

FINISHED BY _____

CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AMP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANYPASNYUNIT/S INP.3

SUBJECT

MASONRY WALL NO. 54

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM			<u>JKATZ</u>	<u>ALP</u>
FINAL			DATE <u>6-12-80</u>	DATE <u>7-21-80</u>
VOID				
SHEET	OF		DATE	DATE
J.O	<u>6604.210</u>			

BUILDING: CONTROL BLDG ELEVATION: 15'0REFERENCE DWG.: 9321-F-30523 & F-13823CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN

ASTM STD C-140 REPORT: _____ YES: _____ NO: _____

ASTM STD C-476 REPORT: _____ YES: _____ NO: _____

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWNNOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"COMPRESSIVE STRENGTH f'_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT _____ YES: _____ NO: X

ASTM STD C-270 TYPE _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): _____A.D. DUR-O-WALLVERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): POPESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: DOVE @ RIGHT SIDE: DOVE TAILS@ TOP: DOVE @ LEFT SIDE: DOVE TAILSBOND TYPE: RUPPINGNUMBER OF WYTHES IN WALL UNIT: ONE (1)NOMINAL THICKNESS OF WALL: 8"PERCENTAGE OF SOLID WALL: (Based on net + gross area): 55%BEARING WALL: NO NON-BEARING WALL: YESFIRE WALL: YES RATING: _____RADIATION WALL: NO RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 16'0 INCL CONC. BH.WIND LOADS: NO MAX LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

NAME OF COMPANY PASNY UNITS

SUBJECT MASONRY WALLS I.E. BULLETIN NO 80-11

9321-F-30393
9321-F-31453
9321-F-31583
9321-F-30893
9321-F-30593

BUILDING CTRL RM WALL NO 54 REF. DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
		ELECT. TERM. BOX	WJ6		X	X		
		STA. SERV. XFMR 6	BAG		X		X	
		STA. SERV. XFMR 5	BAB		X		X	
		SWTR + RECF. CTRSTH	PS6		X	X		
		THERMO, T1	TY4			X		
	TRANS. NO. 48N/CC	TRANS. EL. 26'2"			X		X	
	66N/CA	26'2"			X		X	
	71N/CD	26'2"			X		X	
	74N/CB	26'2"			X		X	
	75N/DB	25'2"			X		X	
	65N/CA	27'2"			X		X	
	70N/CD	27'2"			X		X	
	73N/CB	27'2"			X		X	
	64N/CA	28'2'			X		X	
	93N/CD	28'2'			X		X	
	72N/CB	TRANS. FL 28'2"			X		X	

FINAL	DATE 6-25-80	DATE 1-21-80
VOID		
SHEET 1 of 2	DATE	DATE
JO 6604.210		

PASNY

IN 3 2017

MASONRY WALL SITE BULLETIN NO 20-11

ORIGINAL			
FINAL			
VOID			
SHEET	2	OF	2
JO 6604.210			

REF

DRAWINGS

BUILDING 071132110 WALL NO 54

[illegible]



united engineers & constructors inc.

CALCULATION SUMMARY
& REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL 54

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 5 OF 5

J.O. 6604.210

R_E

COMP. BY

CHK'D BY

0

VM.

ALP

DATE

11/14/80

DATE

11/15/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $\frac{2}{3}$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL.

@ $\frac{2}{3}$ HORIZ. ACCELERATION IS LESS THAN DEAD WT.

THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT

SYSTEM

SUBJECT MASONRY WALL No 55A

DESIGN CLASSIFICATION

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH KATZDATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 3

FINISHED BY

CHECKED BY

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)



NAME OF

COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALL NO. 55Q

CALC. SET NO.		REV	COM'D BY	CHK'D BY
PRELIM			SKATE	AIP
FINAL		0	DATE 6-7-80	DATE 7-17-80
VOID				
SHEET OF			DATE	DATE
JO 10004-210				

BUILDING: CONTROL BLDG ELEVATION: 33'0

REFERENCE DWG.: 9321-F-30523 & F-13803

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"

COMPRESSIVE STRENGTH f_m = SEE CRITERIA

MORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE: COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

U.D. DUR-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: DOVE TAILS

@ TOP: NONE @ LEFT SIDE: 8" CMU WALL

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net + gross area):

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 18'0

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S JNP3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	PC	DE
FINAL			DATE 6-17-80	DATE 7-21-80
VOID			DATE	DATE
SHEET 1 OF 2		JO 6604.210		

 BUILDING Control Bldg WALL NO 55A REF. 9321-F-30523
EL. 1540.. DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
+25 th		VENT DUCT				YES	NO	



united engineers
 & constructors, inc.

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS; BULLETIN NO. 80-II

REV	COMP BY	CHK'D BY
0	SC	PD
DATE	DATE	DATE
6-26-80	7-21-80	
VOID		
FINAL		
PRELIM		
CALC SET NO.		
SHEET 2 OF 2		
JO 6604.210		

WALL N° 55A

REF.

DRAWINGS

9321-F-30393

9321-F-30893

9321-F-31483

[illegible]


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**
CALC. SET NO.
PRELIM.
FINAL
VOID
SHEET 3 OF 3
J.O. 6604.210
R_EV
COMP. BY
CHK'D BY
0
V.H.
AIP
DATE
9-18-90

DATE
10-1-90

DATE
DATE
PROJECT TITLE PASNY **DISCIPLINE** STRUCT.
SYSTEM
SUBJECT MASONRY WALL. No 55A
DESIGN CLASSIFICATION

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE LOADING IN TENSION IS 24 PSI. DBE SEISMIC IS 2/3 DBE, NO CALCULATIONS PREPARED FOR DBE.

SEISMIC ACCL. IS LESS THAN I.O. VERTICAL ACCELERATION @ 2/3 HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES


united engineers & constructors inc.
CALCULATION CONTROL SHEET
CALC. SET NO.
PRELIM.
FINAL
VOID

✓

PROJECT TITLE PASNY **DISCIPLINE** STRUCT.
SYSTEM
SUBJECT MASONRY WALL No 55E
DESIGN CLASSIFICATION
STARTED BY V. MEHTANI
DATE 8/4/80
AUTHORIZED BY MR. JOSEPH KATZ
DATE 8/2/80
PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)
DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 6
FINISHED BY _____ **CHECKED BY** _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	AIP			
DATE	10/30/80			

REVISION

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 55b

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	JKATZ	ALP
FINAL			DATE	DATE
VOID			6-17-80	7-21-80
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: CONTROL BLDG

ELEVATION: 33'-0

REFERENCE DWG.:

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"

COMPRESSIVE STRENGTH f_m = SEE CRITERIA

MORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE: COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.P. DWR-2-WALL

VERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): UNKNOWN

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" CMU WALL

@ TOP: NONE @ LEFT SIDE: DOVE TAILS

BOND TYPE: BUILDING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net + gross area): 55%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 18'-0

WIND LOADS: NO MAX LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET



(DISCIPLINE)

NAME OF COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	PW	DE
FINAL			DATE 6-10-80	DATE 7-27-80
VOID				
SHEET	1	OF	3	
JO 6604.210			DATE	DATE

CONTROL
 BUILDING EL. 33'-0" WALL NO 55B REF. DRAWINGS 9321-F-30523 F-40563-2

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
7=35#		VENT. DUCTWORK			NO	YES	NO	

GENERAL COMPUTATION SHEET

(DISCIPLINE)



NAME OF COMPANY

PASNY

UNITS

SUBJECT MASONRY WALLS I.E. BULLETIN NO 80-11

9321-F-30393

9321-F-31483

9321-F-31493

BUILDING CTRL RM
BL 33-0"

WALL NO 55B

REF. DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	TRAY NO 47P/CB	TRAY EL 42'-6"			X		X	
	23N/CB	42'-6"			X		X	
	24N/CB	41'-6"			X		X	
	25N/CB	40'-6"			X		X	
	75K/DB	48'-2"			X		X	
	OIL/JB	47'-2"			X		X	
	OIL/DB	46'-2"			X		X	
	OIL/FB	45'-2"			X		X	
	25L/JD	39'-2"			X		X	
	25L/OD	38'-2"			X		X	
	25L/FD	37'-2"			X		X	
	13N/DD	37'-2"			X		X	
	20N/CD	36'-2"			X		X	
	21N/CD	36'-2"			X		X	
	22N/CD	36'-2"			X		X	

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	SC	D4
FINAL		DATE	1/26/80	DATE
VOID		DATE		DATE
SHEET 2 OF 3		JO 6604.210		

(DISCIPLINE)

GENERAL COMPUTATION SHEET

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHKD BY
PRELIM		0	SC	DCI
FINAL			DATE 6-26-80	DATE 7-22-80
VOID				
SHEET 3 OF 3		DATE	DATE	DATE
JO 6604.210				

BUILDING CTRL BLD'G
EL. 33'-0"

WALL NO 55 B

REF.

9321-F-31483

DRAWINGS

9321-F-31493

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	TRAY NO. 13K/DA	TRAY EL. 46'-10"			X		X	
	57K/JA	45'-10"			X		X	
	57K/DA	44'-10"			X		X	
	57K/FA	43'-10"			X		X	
	75N/CA	42'-6"			X		X	
	16N/CA	41'-6"			X		X	
	17N/CA	40'-6"			X		X	
	36K/Jc	39'-2"			X		X	
	37K/Dc	38'-2"			X		X	
	37K/Fc	37'-2"			X		X	
	40K/cc	36'-2"			X		X	
	33P/cc	36'-2"			X		X	
	18N/cc	35'-8"			X		X	
	13N/cc	34'-2"			X		X	


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL. No 55B

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

 SHEET 6 OF 6

 J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

V.H.

DATE

3-18-90

DATE

11/15/90

DATE

DATE

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS 12.3 CPS
 ACTUAL STRESSES FOR DBE LOADING IN
 TENSION IS 47 PSI. DBE SEISMIC IS $2\frac{2}{3}$ DBE
 CALCULATIONS PREPARED FOR DBE, TENSION IS 49 PSI.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL
 ACCELERATION @ $2\frac{2}{3}$ HORIZ. ACCELERATION IS LESS
 THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE
 STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE
 NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA
 PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR
 CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES



united engineers & constructors inc.

CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE

PASNY

DISCIPLINE

STRUCT

SYSTEM

SUBJECT

MASONRY WALL No 56A

DESIGN CLASSIFICATION

STARTED BY

V. MEHTANI

DATE

8/1/80

AUTHORIZED BY

MR. JOSEPH KATZ

DATE

8/2/80

PROBLEM STATEMENT

ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS

3

FINISHED BY

CHECKED BY

CHECKER

DESIGN SUPER

COGNIZANT ENG'R

DESIGN REVIEW

BY

AIP

DATE

10/30/80

REVISION 1 STARTED DATE

BY

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP3

SUBJECT

MASONRY WALL NO. 56A

CALC. SET NO.		REV	COMP BY	CHK'D BY
PRELIM			JKATE	AIP
FINAL			DATE 6-17-80	DATE 7-22-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: COLTRAX BGDG

ELEVATION: 33'0

REFERENCE DWG.: 9321-E-30523 & F-13803

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

#.D. DWR-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" C.H.U WALL

@ TOP: NONE @ LEFT SIDE: 8" C.H.U WALL

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 18'0

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

(DISCIPLINE)

GENERAL COMPUTATION SHEET



united engineers
a construction co.

NAME OF COMPANY

PASNY

UNITS INP.3

SUBJECT MASONRY WALLS IE BULLETIN № 80-II

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	PW	DB
FINAL		DATE	10-18-80	DATE
VOID				10-22-80
SHEET	1 OF 2	DATE		DATE
JOB 66604.210				

BUILDING CONTRACT BLDG WALL NO 56A REF. 9321-F-30523
EL. 33'-0" DRAWINGS F-40633
 INODE/ITEM/SAFETY ATTACHED/PROXIMATE/

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
7=35 th		Duct Work				YES	NO	



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL No 50A

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 3 OF 3

J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

VM.

ALP

DATE

10/20/80

DATE

10/20/80

DATE

DATE

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION

CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

SUBJECT MASONRY WALL No 56B

DESIGN CLASSIFICATION

STARTED BY V. MEHTANI

DATE 8/4/80

AUTHORIZED BY MR. JOSEPH KATZ

DATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL. & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 2

FINISHED BY _____ CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>11/15/80</u>			

REVISION 1 STARTED DATE

GENERAL COMPUTATION SHEET

(DISCIPLINE)



NAME OF COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 566

CALC. SET NO		R/V	COMP BY	CHK'D BY
PRELIM		0	J. KATZ	AIP
FINAL			DATE 6-17-80	DATE 7-23-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: CONTROL BLDG ELEVATION: 33'-0"

REFERENCE DWG.:

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN
 ASTM STD C-140 REPORT: YES: NO: X
 ASTM STD C-476 REPORT: YES: NO: X
 FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN
 NOMINAL DIMENSIONS: HT: 8" LENGTH: 16" THK: 8"
 COMPRESSIVE STRENGTH f_m = SEE CRITERIA
 MORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X
 ASTM STD C-270 TYPE: COMPRESSIVE STRENGTH:
 ASTM STD C-476: COMPRESSIVE STRENGTH:
 HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):
 H.O. DUR-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): LOUPE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" C.H.W. WALL
 @ TOP: NONE @ LEFT SIDE: DOVE TAILS

BOND TYPE: RUNNING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): 55%

BEARING WALL: NO NON-BEARING WALL: YES

FIRE WALL: YES

RADIATION WALL: NO

PRESSURE WALL: NO

MISSILE WALL: NO

IMPACT WALL: NO

SEISMIC WALL: YES

WIND LOADS: NO

TORNADO LOADS: NO

RATING:

RATING:

MAX. LOAD:

TYPE:

TYPE:

HEIGHT: 18'-0"

MAX LOAD:

TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS JNP.3

SUBJECT

MASONRY WALLS I.E. BULLETIN Nº 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	PC	DB
FINAL			DATE 6-12-85	DATE 1-21-86
VOID				
SHEET	OF		DATE	DATE
JO 6604.210	3			

REF.
DRAWINGS9321-F-30523
F-40633BUILDING Control Bldg WALL Nº 56 B
EL 33'10"

SYSTEM	EQUIP. TAG Nº	DESCRIPTION	NODE Nº	ITEM Nº	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
ST-150 #1/SUPPORT		DUCT WORK				YES	NO	

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS INP3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHKD BY
PRELIM		0	SC	DG
FINAL		DATE	6-27-80	DATE
VOID		DATE		DATE
SHEET 2 OF 3		JO 6604.210		

9321-F-31493

9321-F-31483

REF.

DRAWINGS 9321-F-30393

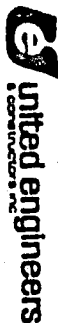
BUILDING CTRL BLD'G
EL. 33'-0"

WALL NO 56B

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	TRAY NO 75K/DB	TRAY EL. 48'-2"			X		X	
	01L/DB	47'-2"			X		X	
	01L/DB	46'-2"			X		X	
	01L/FB	45'-2"			X		X	
	25N/CB	42'-6"			X		X	
	24N/CB	41'-6"			X		X	
	25N/CB	40'-6"			X		X	
	25L/DB	39'-2"			X		X	
	25L/DD	38'-2"			X		X	
	25L/FD	37'-2"			X		X	
	13N/DD	37'-2"			X		X	
	20N/CD	36'-2"			X		X	
	21N/CD	35'-2"			X		X	
	22N/CD	34'-2"			X		X	
	47P/CB	42'-6"			X		X	
					X		X	

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS: INP.3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	SC	DC
FINAL		DATE	DATE	DATE
VOID		6-28-80	7-22-80	
SHEET 3 OF 3		DATE	DATE	DATE
JO 6604.210				

9321-F-30393

9321-F-30563

9321-F-31493

9321-F-31483

BUILDING CTRL - BLD'G
EL 33'-0"

WALL NO

56B

REF.
DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	TRAINING 13K/DA	TRAY EL. 46'-10"			X		X	
	57K/JA	45'-10"			X		X	
	57K/DA	44'-10"			X		X	
	57K/FA	43'-10"			X		X	
	75N/CA	42'-6"			X		X	
	16N/CA	41'-6"			X		X	
	17N/CA	40'-6"			X		X	
	36K/JC	39'-2"			X		X	
	37K/DC	38'-2"			X		X	
	37K/FC	37'-2"			X		X	
	40K/CC	36'-2"			X		X	
	33P/CC	36'-2"			X		X	
	18N/CC	35'-8"			X		X	
	13N/CC	34'-2"			X		X	


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL. 1056B

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

 SHEET 4 OF 4

 J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

V.H.

AIP

 DATE
9-18-90

 DATE
11/15/20

DATE

DATE

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS 21.44 CPS
RANGE. ACTUAL STRESSES FOR DBE LOADING IN
TENSION IS 30 PSI. DBE SEISMIC IS $2/3$ DBE
CALCULATIONS PREPARED FOR DBE, TENSION IS 25.2 PSI

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL
ACCELERATION @ $2/3$ HORIZ. ACCELERATION IS LESS
THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE
STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE
NO DESIGN IMPACT. ON ANALYSIS.

 REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA •
PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR
CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES

CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL No 57A

DESIGN CLASSIFICATION _____

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH KATZDATE 8/2/80

PROBLEM STATEMENT: ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS _____

FINISHED BY _____

CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/30/80</u>			

REVISION 1 STARTED DATE _____

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANYPASNYUNIT/S INP.3

SUBJECT

MASONRY WALL NO. 57a

CALC. SET NO		REV	COMPI BY	CHK'D BY
PRELIM		0	J. KATZ	AIP
FINAL			DATE 6-20-80	DATE 7/23/80
VOID				
SHEET	OF		DATE	DATE
JO 6604-210				

BUILDING: CONTROL BLDG ELEVATION: 53'0REFERENCE DWG.: 9321-F-30523 & F 13813CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWNASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWNNOMINAL DIMENSIONS: HT.: 8" LENGTH: 16" THK.: 8"COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): _____

H.D. D112-0-WALLVERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: 8" C.M.U. WALL@ TOP: NONE @ LEFT SIDE: 8" C.M.U. WALLBOND TYPE: BUILDINGNUMBER OF WYTHES IN WALL UNIT: ONE (1)NOMINAL THICKNESS OF WALL: 8"PERCENTAGE OF SOLID WALL: (Based on net + gross area): 55% / 0BEARING WALL: NO NON-BEARING WALL: YESFIRE WALL: YES RATING: _____RADIATION WALL: NO RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 17'0 INCL CONC. C.M.WIND LOADS: NO MAX LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS JNP3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	DATE	DATE
FINAL			DATE	
VOID				
SHEET	OF		DATE	DATE
JO 6604.210				

REF.

9321-F-30523

DRAWINGS

BUILDING Control Bldg WALL NO 57 A B C D

EL. 53'-0"

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
= 20#		DUCT WORK				YES	70	


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

CALC. SET NO.

PRELIM.

FINAL

VOID

 SHEET 5 OF 5

 J.O. 6604.210

REV

COMP. BY

CHK'D BY

0

V.H.

AIP

 DATE
9-18-80

 DATE
10/20/80

DATE

DATE

SYSTEM

SUBJECT

MASONRY WALL. No 57A

DESIGN CLASSIFICATION

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE LOADING IN TENSION IS 36 PSI. DBE SEISMIC IS $2\frac{2}{3}$ DBE, NO CALCULATIONS PREPARED FOR DBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL ACCELERATION @ $2\frac{2}{3}$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES



CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

SUBJECT MASONRY WALL No 57B

DESIGN CLASSIFICATION _____

STARTED BY V. MEHTANIDATE 8/4/80AUTHORIZED BY MR. JOSEPH KATZDATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 3

FINISHED BY _____ CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 576

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	JKATZ	ALP
FINAL			DATE 6-17-80	DATE 8-1-80
VOID				
SHEET OF			DATE	DATE
JO 6604-210				

BUILDING: CONTROL BLDG ELEVATION: 53'0REFERENCE DWG.: 9321-F-35523 & F-13813CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWNASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT.: _____ LENGTH: _____ THK.: _____

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): _____

H.D. DUQ-S-WALLVERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: _____ @ RIGHT SIDE: _____

@ TOP: _____ @ LEFT SIDE: _____

BOND TYPE: BUILDINGNUMBER OF WYTHES IN WALL UNIT: ONE (1)NOMINAL THICKNESS OF WALL: 8"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): _____

BEARING WALL: NO NON-BEARING WALL: _____FIRE WALL: YES RATING: _____RADIATION WALL: NO RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 17'0 INCL CONC PMWIND LOADS: NO MAX LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

DISCIPLINE

GENERAL COMPUTATION SHEET

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	DATE	DATE
FINAL			DATE	
VOID				
SHEET	OF		DATE	DATE
JO 6604.210				

REF.

9321-F-30523

DRAWINGS

BUILDING CONTROL Bldg. WALL NO 57A B, C, D

EL. 53'-0"

STEM	EQUIP. TAG NO	DESCRIPTION	NODE No	ITEM No	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
20 th		DUCT WORK				YES	20	



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 3 OF 3

J.O. 6604.210

REV. COMP. BY CHK'D BY

0. V.H. AIP
DATE 9-18-90 DATE 10/30/20

DATE

DATE

SYSTEM

SUBJECT MASONRY WALL. No 57B

DESIGN CLASSIFICATION

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE LOADING IN TENSION IS 25.3 PSI. OBE SEISMIC IS $2/3$ DBE; NO CALCULATIONS PREPARED FOR OBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL ACCELERATION @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES


united engineers & constructors inc.
CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE

PASNY

DISCIPLINE

STRUCT

SYSTEM

SUBJECT

MASONRY WALL No 57C

DESIGN CLASSIFICATION

STARTED BY

V. MEHTANI

DATE

8/4/80

AUTHORIZED BY

MR. JOSEPH. KATZ

DATE

8/2/80

PROBLEM STATEMENT

ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & OBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS

3

FINISHED BY

CHECKED BY

CHECKER

DESIGN SUPER

COGNIZANT ENG'R

DESIGN REVIEW

BY

AIP

DATE

10/30/80

REVISION 1 STARTED DATE

BY

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT MASONRY WALL NO. 57C

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM			J. KATZ	ALP
FINAL			DATE 7/1/80	DATE 8-3-80
VOID				
SHEET	OF		DATE	DATE
J.O	6604-210			

BUILDING: CONTROL BLDG ELEVATION: 53'0

REFERENCE DWG.: 9321-F-30523 & F-13813

CONCRETE MASONRY UNITS

ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWN

ASTM STD C-140 REPORT: YES: NO: X

ASTM STD C-476 REPORT: YES: NO: X

FACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: LENGTH: THK:

COMPRESSIVE STRENGTH f_m = SEE CRITERIA

MORTAR/GROUT

ASTM STD C-91 REPORT: YES: NO: X

ASTM STD C-270 TYPE COMPRESSIVE STRENGTH:

ASTM STD C-476 COMPRESSIVE STRENGTH:

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):

H.O. DUR-O-WALL

VERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONE

SHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)

@ BASE: NONE @ RIGHT SIDE: 8" C.M.W. WALL

@ TOP: NONE @ LEFT SIDE: 8" C.M.W. WALL

BOND TYPE: BONDING

NUMBER OF WYTHES IN WALL UNIT: ONE (1)

NOMINAL THICKNESS OF WALL: 4"

PERCENTAGE OF SOLID WALL: (Based on net ÷ gross area): UNKNOWN

BEARING WALL: NO NON-BEARING WALL:

FIRE WALL: YES RATING:

RADIATION WALL: NO RATING:

PRESSURE WALL: NO MAX. LOAD:

MISSILE WALL: NO TYPE:

IMPACT WALL: NO TYPE:

SEISMIC WALL: YES HEIGHT: 9'-4

WIND LOADS: NO MAX. LOAD:

TORNADO LOADS: NO TYPE:

MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

ELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO:

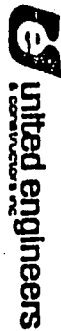
DESCRIBE: SEE ATTACHED LIST

MISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO:

DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

DISCIPLINE:

NAME OF
COMPANY

PASNY

UNITS JNP.3

SUBJECT:

MASONRY WALLS IE BULLETIN NO. 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	Pu	De
FINAL			DATE 6-18-80	DATE 7-12-80
VOID				
SHEET	OF 1		DATE	DATE
JO 6604.210				

 BUILDING Control Bldg. WALL NO 57 A B C D REF. 9321-F-30523
EL. 53'-0" DRAWINGS

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
20 th		DUCT WORK				YES	20	



CALCULATION SUMMARY & REFERENCE SHEET

PROJECT TITLE PASNY DISCIPLINE STRUCT.

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 3 OF 3

J.O. 6604. 210

REV

COMP. BY

CHK'D BY

0

VM.

DID

DATE

10/30/80

DATE

10/20/80

DATE

DATE

SYSTEM

SUBJECT MASONRY WALL No 51C

DESIGN CLASSIFICATION

SUMMARY/CONCLUSIONS

FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE SEISMIC LESS THAN ALLOWABLE STRESSES FOR DBE SEISMIC. SINCE DBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR CDBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERT. ACCL. @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES. EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC. MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT A.R.S. CURVES
- 4) TIMOSHENKO, YOUNG & WEAVER "VIBRATION PROBLEMS IN ENGINEERING" 4th EDITION



united engineers & constructors inc.

CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM

SUBJECT MASONRY WALL No 57D

DESIGN CLASSIFICATION

STARTED BY V. MEHTANI

DATE 8/4/80

AUTHORIZED BY MR. JOSEPH KATZ

DATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 2

FINISHED BY _____ CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>ALP</u>			
DATE	<u>10/30/80</u>			

REVISION 1 STARTED DATE

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S INP.3

SUBJECT

MASONRY WALL NO. 57d

CALC. SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	J KATZ	AIP
FINAL			DATE 6-21-80	DATE 8/1/80
VOID				
SHEET	OF		DATE	DATE
J.O	6604-210			

BUILDING: COURTAL BLDGELEVATION: 53'0

REFERENCE DWG.:

CONCRETE MASONRY UNITSASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWNASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: _____ LENGTH: _____ THK: _____

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

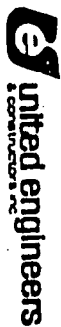
ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476 _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING):I.O. DURT-O-WALLVERTICAL CORE & DOWL. REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: 8" C.M.U WALLS@ TOP: NONE @ LEFT SIDE: DOVE TAILSBOND TYPE: BUCKINGNUMBER OF WYTHES IN WALL UNIT: ONE (1)NOMINAL THICKNESS OF WALL: 4"PERCENTAGE OF SOLID WALL: (Based on net + gross area): UNKNOWNBEARING WALL: NO NON-BEARING WALL: _____FIRE WALL: YES RATING: _____RADIATION WALL: NO RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 9'-4WIND LOADS: NO MAX LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNIT/S JNP.3

SUBJECT MASONRY WALLS IE BULLETIN Nº 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	DATE	DATE
FINAL				
VOID				
SHEET	OF		DATE	DATE
J.O	6604.210			

REF.

9321-F-30523

DRAWINGS

BUILDING Control Bldg. WALL Nº 57 A B C D

EL. 53'-0"

SYSTEM	EQUIP. TAG Nº	DESCRIPTION	NODE Nº	ITEM Nº	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
20 th		DUCT WORK				YES	20	


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

CALC. SET NO.

PRELIM.

FINAL

VOID

SHEET 2 OF 2

J.O. 6604.210

 R_{EV}

COMP. BY

CHK'D BY

0

V.H.

 DATE
2-18-79

DATE

DATE

DATE

SYSTEM

SUBJECT

MASONRY WALL. No 57D

DESIGN CLASSIFICATION

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS IN RIGID RANGE. ACTUAL STRESSES FOR DBE LOADING IN TENSION IS $2/4$ PSU. OBE SEISMIC IS $2/3$ DBE, NO CALCULATIONS PREPARED FOR OBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL ACCELERATION @ $2/3$ HORIZ. ACCELERATION IS LESS THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE NO DESIGN IMPACT ON ANALYSIS.

REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES

CALCULATION CONTROL SHEET

CALC. SET NO.

PRELIM.

FINAL

VOID

PROJECT TITLE PASNY DISCIPLINE STRUCT

SYSTEM _____

SUBJECT MASONRY WALL No 58a

DESIGN CLASSIFICATION _____

STARTED BY V. MEHTANI

DATE 8/4/80

AUTHORIZED BY MR. JOSEPH. KATZ

DATE 8/2/80

PROBLEM STATEMENT ANALYSIS OF MASONRY WALLS
FOR RESISTING SEISMIC FORCES (SSE & DBE)

DESIGN BASIS

- 1) FROM THE DATA SHEETS & DRAWINGS, DETERMINE THE WALL THICKNESS AND PANEL DIMENSIONS.
- 2) CALCULATE THE NATURAL FREQUENCY OF THE PANEL BASED ON THE ASSUMED BOUNDARY CONDITIONS.
- 3) FROM THE AMPLIFIED RESPONSE CURVES, DETERMINE THE SEISMIC ACCELERATION BASED ON THE CALCULATED FREQUENCY.
- 4) COMBINE DL & SEISMIC FORCES TO DETERMINE MAX. STRESSES IN THE PANEL
- 5) SSE IS EQUIVALENT TO DBE

TOTAL NUMBER OF SET COMPUTATION SHEETS 9

FINISHED BY _____

CHECKED BY _____

	CHECKER	DESIGN SUPER	COGNIZANT ENG'R	DESIGN REVIEW
BY	<u>AIP</u>			
DATE	<u>10/30/80</u>			

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANYPASNYUNIT/S INP.3SUBJECT MASONRY WALL NO. 58a

CALC. SET NO		R/V	COMP. BY	CHK'D BY
PRELIM		0	J. KATZ	AIP
FINAL			DATE 6.17.80	8-1-80
VOID				
SHEET	OF		DATE	DATE
J.O.	6604-210			

BUILDING: CONTROL BLDG ELEVATION: 53'0REFERENCE DWG.: 9321-P-30523 & F-13813CONCRETE MASONRY UNITS PARE-FACED (GLAZED UNITS)ASTM STD C-90 GRADE: UNKNOWN TYPE: UNKNOWN UNIT WT. UNKNOWNASTM STD C-140 REPORT: _____ YES: _____ NO: XASTM STD C-476 REPORT: _____ YES: _____ NO: XFACE SHELL THICKNESS: UNKNOWN WEB SHELL THICKNESS: UNKNOWN

NOMINAL DIMENSIONS: HT: _____ LENGTH: _____ THK: _____

COMPRESSIVE STRENGTH f_m = SEE CRITERIAMORTAR/GROUTASTM STD C-91 REPORT: _____ YES: _____ NO: X

ASTM STD C-270 TYPE: _____ COMPRESSIVE STRENGTH: _____

ASTM STD C-476: _____ COMPRESSIVE STRENGTH: _____

HORIZONTAL JT. REINFORCING (LIST MFG., TYPE & SPACING): UNKNOWNVERTICAL CORE & DOWL REINF. (LIST SIZE, GRADE & SPACING): NONESHEAR TRANSFER MECHANISMS (SEE STD. DETAILS)@ BASE: NONE @ RIGHT SIDE: 8" C.M.U WALLS@ TOP: NONE @ LEFT SIDE: DOVE TAILSBOND TYPE: RUNNINGNUMBER OF WYTHES IN WALL UNIT: ONE (1)NOMINAL THICKNESS OF WALL: 8"PERCENTAGE OF SOLID WALL: (Based on net + gross area): UNKNOWNBEARING WALL: NO NON-BEARING WALL: YESFIRE WALL: YES RATING: _____RADIATION WALL: NO RATING: _____PRESSURE WALL: NO MAX. LOAD: _____MISSILE WALL: NO TYPE: _____IMPACT WALL: NO TYPE: _____SEISMIC WALL: YES HEIGHT: 17'0 (INCL CONC. BM.)WIND LOADS: NO MAX LOAD: _____TORNADO LOADS: NO TYPE: _____MECHANICAL EQUIPMENT "OR" PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTELECTRICAL EQUIPMENT OR TRAYS ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LISTMISCELLANEOUS EQUIPMENT OR PIPING ATTACHED: YES: X NO: _____DESCRIBE: SEE ATTACHED LIST

GENERAL COMPUTATION SHEET

(DISCIPLINE)

United Engineers
& Constructors, Inc.NAME OF
COMPANY

PASNY

UNIT/S JNP3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO		REV	COMP BY	CHK'D BY
PRELIM		0	PW	DE
FINAL			DATE 6-18-84	DATE 7-21-84
VOID				
SHEET	1	OF	2	DATE
JO 6604.210				

BUILDING <u>Control Bldg.</u> WALL NO <u>58 A, B, C, D</u>			REF. <u>9321-F-30523</u>		DRAWINGS <u>F-40593</u>			
<u>EL. 53'-0"</u>			NODE	ITEM	SAFETY	ATTACHED	PROXIMATE	REMARKS
SYSTEM	EQUIP. TAG NO	DESCRIPTION	NO	NO	RELATED	TO WALL	TO WALL	
	UT = 100 #/sq ft	DUCT WORK				YES	NO	

EL. 53'-0"

GENERAL COMPUTATION SHEET

(DISCIPLINE)

NAME OF
COMPANY

PASNY

UNITS JNP.3

SUBJECT

MASONRY WALLS IE BULLETIN NO 80-11

CALC SET NO.		REV	COMP BY	CHK'D BY
PRELIM		0	SC	D4
FINAL			DATE 6-30-80	DATE 7-5-80
VOID				
SHEET 2 OF 2		DATE		DATE
JO 6604.210				

9321-F-30393

9321-F-30563

REF.

BUILDING CTRL BLD'G EL. 53'-0" WALL NO 58A, B, C, D DRAWINGS 9321-F-31493

SYSTEM	EQUIP. TAG NO	DESCRIPTION	NODE NO	ITEM NO	SAFETY RELATED	ATTACHED TO WALL	PROXIMATE TO WALL	REMARKS
	A7, A8, A9 & A10 UNITS	REACTOR PROTECTION CH. II	JH1 TO JH4				X	
	A6 UNIT	RC5	JG9				X	
	A5 UNIT	RCS / ACS	JG8				X	
	A1, A2, A3 & A4 UNIT	REACTOR PROTECTION CH I	JG2 TO JG5				X	
	B1, B2, B3	REACTOR PROTECTION CH. III	JF1 TO JF3				X	
	B4 & B5	FEED WTR CTRL	JF4 JF5				X	
	B6	PRES'R & LAV ETC	JF6				X	
	B7	ROD CONTR.	JF7				X	
	B8	ROD LIMIT	JF8				X	
	B9, B10	REACTOR PROTECTION CH II	JF9 JG1				X	
	C1, C2, C3, & C4	ROD POSITION	JDB89 JE3&4				X	
	C5, C6, C7, C8	N. I.S.	JEG TO JEG				X	
	C9, C10	C.V.C.S.	JG6 JG7				X	


united engineers & constructors inc.
**CALCULATION SUMMARY
& REFERENCE SHEET**

 PROJECT TITLE PASNY DISCIPLINE STRUCT.

SYSTEM _____

 SUBJECT MASONRY WALL. No 58 A

DESIGN CLASSIFICATION _____

CALC. SET NO.

PRELIM.

FINAL

VOID

 SHEET 9 OF 9

 J.O. 6604.210

 R_{EV}

COMP. BY

CHK'D BY

0

 V.H.
DATE
9-15-90

 AIP
DATE
10/27/90

DATE

DATE

SUMMARY/CONCLUSIONS FREQUENCY OF PANEL IS 25.7 CPS
 ACTUAL STRESSES FOR DBE LOADING IN
 TENSION IS 15.0 PSI. OBE SEISMIC IS 2/3 DBE, NO
 CALCULATIONS PREPARED FOR OBE.

SEISMIC ACCL. IS LESS THAN 1.0. VERTICAL
 ACCELERATION @ 2/3 HORIZ. ACCELERATION IS LESS
 THAN DEAD WT. THEREFORE NO INCREASE IN TENSILE
 STRESSES.

EQUIPMENT LOADS ARE NEGLIGIBLE AND HAVE
 NO DESIGN IMPACT ON ANALYSIS.

 REFERENCES: (SPECIFICATIONS, DRAWINGS, CODES, CALCULATION SETS, TEXTS, REPORTS, COMPUTER DATA
 PSAR ETC.)

- 1) ACI 531-79 "CODE REQUIREMENT FOR
 CONC MASONRY STRUCTURES"
- 2) ACI 531R-79 "COMMENTARY"
- 3) PROJECT ARS CURVES