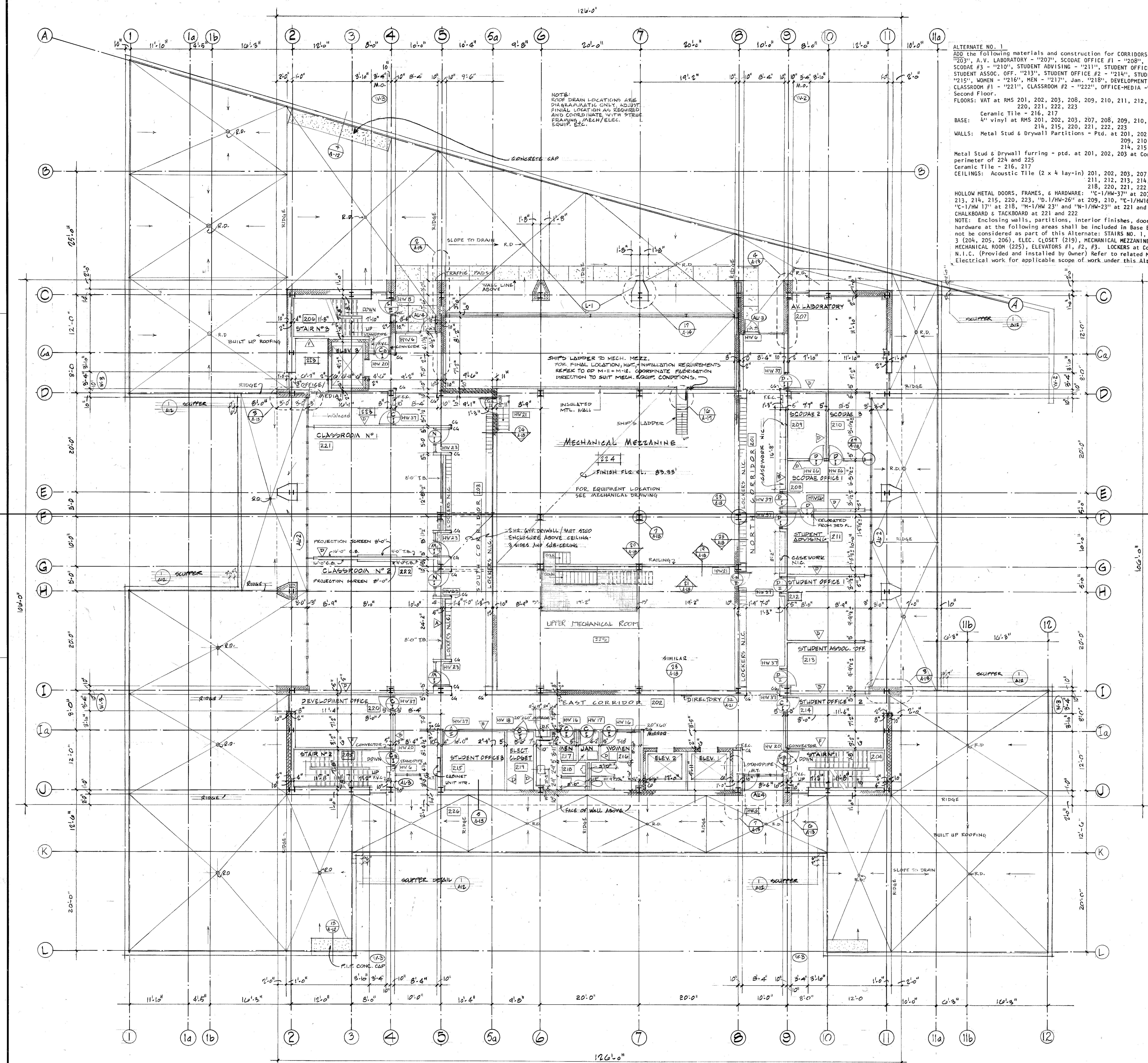


**School of Pharmacy (SOP) – South Documents:**

- A-2 Plan – Second Floor;
- A-5 Plan – Seventh Floor Penthouse & Roof;
- A-7 Exterior Elevations;
- A-11 Sections – Third Thru Seventh Floors;
- A-12 Wall Details First Floor;
- A-14 Wall Detail – Third Thru Seventh;
- A-15 Wall Details – Penthouse & Roof Exterior Elevations Penthouse;
- A-19 Miscellaneous Details;
- SOP Asbestos Report Roof dated 7/2/19; and
- SOP Pullout Test Report
- Infrared Roof Inspection dated 9/25/2019



GENERAL NOTES:

1. See DWG. CD/A18 for interior partition types and construction, fire protection and rating requirements for separation of areas and structural steel protection.
2. See DWG. CD/A17 for Elevator Details.
3. See DWG. CD/A16 for Stair Details.
4. See DWG. CD/A20 for Door, Frame and Entrance Schedules and Details
5. See DWG. CD/A22 for Laboratory Casework Schedule.
6. See DWG. CD/A6 for typical acoustic ceiling and layouts.

**NES, CAMPBELL & PARTNERS / MILLER, SCHUERHOLZ & ASSOCIATES, INC.**

The image shows a formal document header. At the top is a large, handwritten signature in black ink that appears to read "A. O. Kuhn". Below the signature, the text is printed in a bold, serif font. It reads "CHANCELLOR" on the first line, "UNIVERSITY" on the second line, "OF" on the third line, "MAR" on the fourth line, "AT" on the fifth line, and "BALTIMORE" on the sixth line. The "AT" and "BALTIMORE" lines are partially cut off on the right side of the frame.

APPROVED  
S. Gelett 2/26/68  
Marshal Melord 2/26/68  
2/26/68

## REVISIONS

# SCHOOL OF PHARMACY

CD  
A-2

JECT NO. UB-

1000

E: 2.28

# scale 1/8=1 **PLAN - SECOND FLOOR**

**PHARMACY ° CD**

# PHARMACY

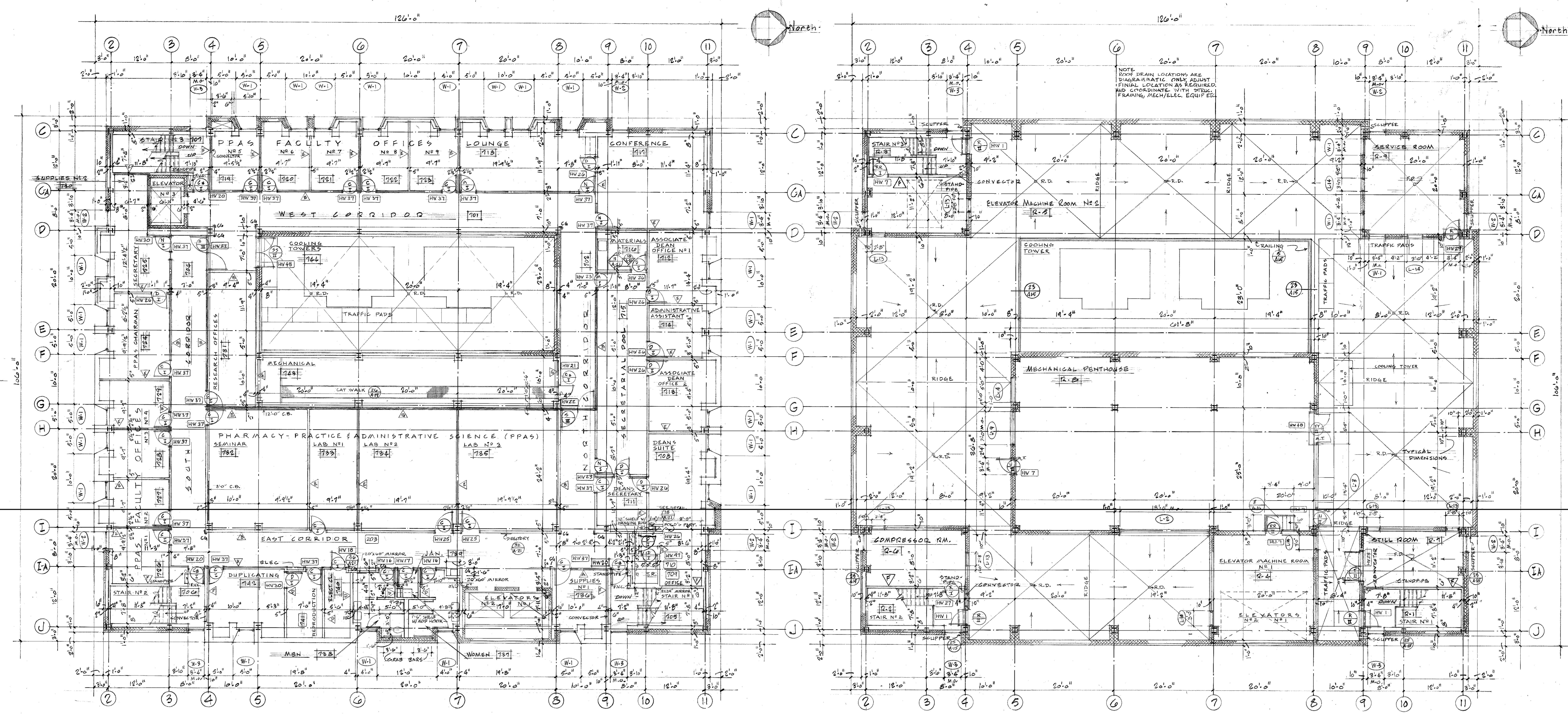
---

WG. N CD  
A-2

JOBE 2000 2000

DATE : 2-28-80

FILE NO. 19 - DWG. NO. 1726  
841 (UB-713) A2



SEVENTH FLOOR PLAN

SMOKE PARTITION

ROOM NO.	SPACE DESIGNATION	FLOOR	BASE	WALLS	CEILING	CLG. HGT.	REMARKS
701	WEST CORRIDOR	V.A.T.	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
702	WEST CORRIDOR	V.A.T.	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
703	EAST CORRIDOR	V.A.T.	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
704	SOUTH CORRIDOR	V.A.T.	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
705	STAIR NO. 1	Hardened Concrete	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Plaster	Varies	
706	STAIR NO. 2	Hardened Concrete	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Cement varies	8'-0"	
707	STAIR NO. 3	Hardened Concrete	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Cement varies	8'-0"	
708	DEAN'S SUITE	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
709	OFFICE (secret cl.)	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
710	T.R.	Ceramic Tile	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
711	DEAN'S SECRETARY	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
712	ADMIN. OFFICE (secret cl.)	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
713	ASSOCIATE PROF. NO. 2	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
714	ASSISTANT PROF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
715	ASSISTANT PROF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
716	MATERIALS	V.A.T.	4" vinyl cove	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
717	CONFERENCE	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
718	LOUNGE	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
719	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
720	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
721	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
722	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
723	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
724	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
725	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
726	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
727	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
728	PPAS FAC. OFF.	Carpet	Unpainted vinyl wall covering	Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
729	SUPPLIES	V.A.T.	4" vinyl cove	CHU & Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	
730	SUPPLIES NO. 2	V.A.T.	4" vinyl cove	CHU & Drywall Ptd. (Acrylic epoxy)	Acoust. Tile Type -1	8'-0"	

GENERAL NOTES:

1. See DWG. CD/A10 for interior partition types and construction, fire protection and route requirements for separation of areas and structural steel protection.
2. See DWG. CD/A17 for Elevator Details.
3. See DWG. CD/A16 for Stair Details.
4. See DWG. CD/A20 for Door, Frame and Entrance Schedules and Details.
5. See DWG. CD/A22 for Laboratory Casework Schedule
6. See DWG. CD/A6 for typical acoustic ceiling and layouts.

Architectural Drawing  
Architectural Drawing  
Architectural Drawing

NES, CAMPBELL & PARTNERS / MILLER, SCHUERHOLZ & ASSOCIATES, INC.  
ARCHITECTS  
LAMPRECHT CONSULTANTS  
DAVID LAWSON GREGORY & ASSOCIATES  
MECHANICAL-ELECTRICAL ENGINEERS  
STRUCTURAL ENGINEERS  
CIVIL ENGINEERS

AD Kuhn  
CHANCELLOR  
UNIVERSITY OF MARYLAND  
AT BALTIMORE

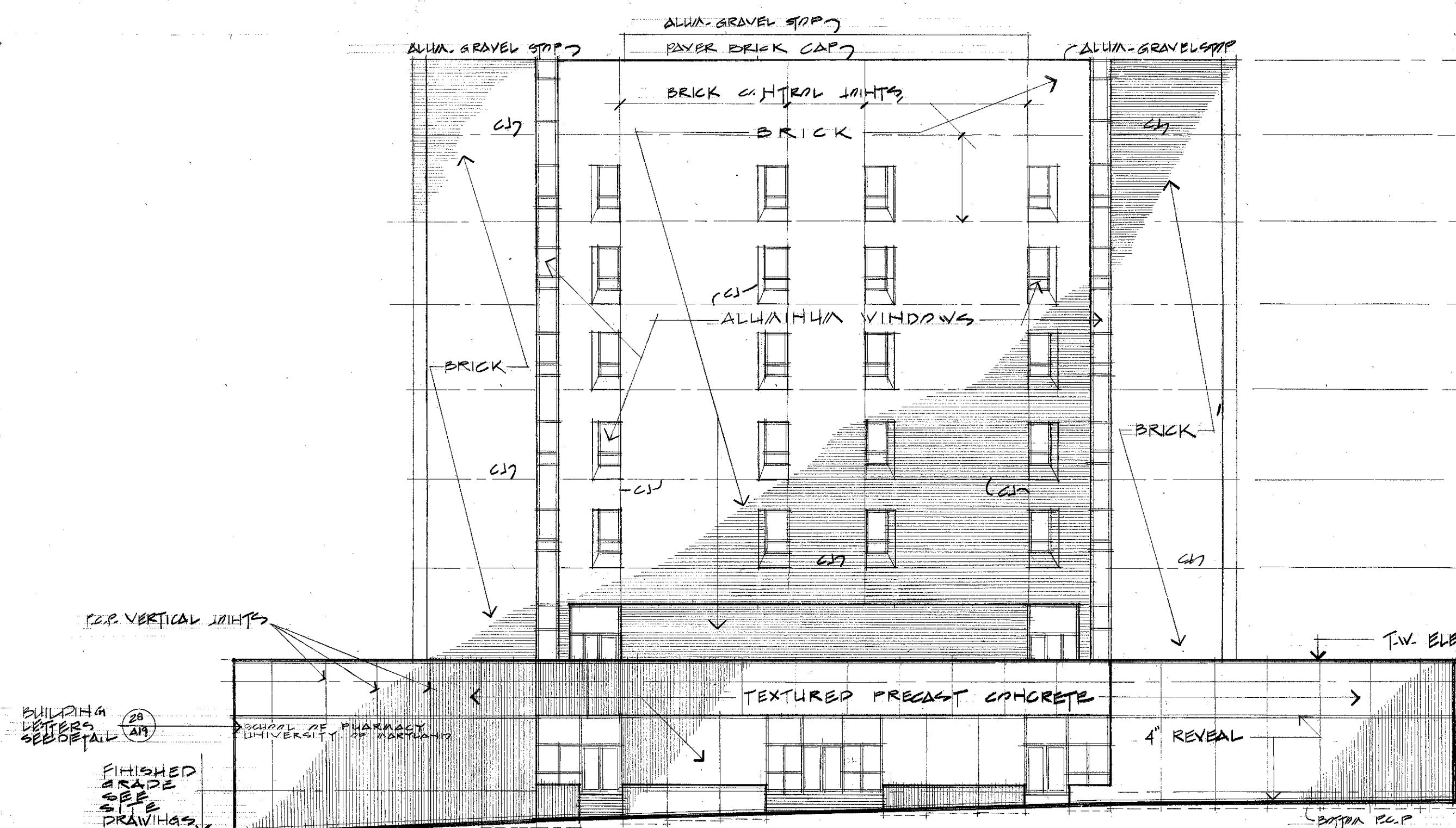
S. J. G. 1982  
Marshall Meland 7/31/82  
DIRECTOR

REVISIONS  
12-1-82 RECORD DRAWINGS

SCHOOL OF PHARMACY CD A-5  
UNIVERSITY OF MARYLAND  
BALTIMORE  
PROJECT NO. UB-713  
DWG. NO. 1729841/UB-713-A-5  
DATE: 2-28-80

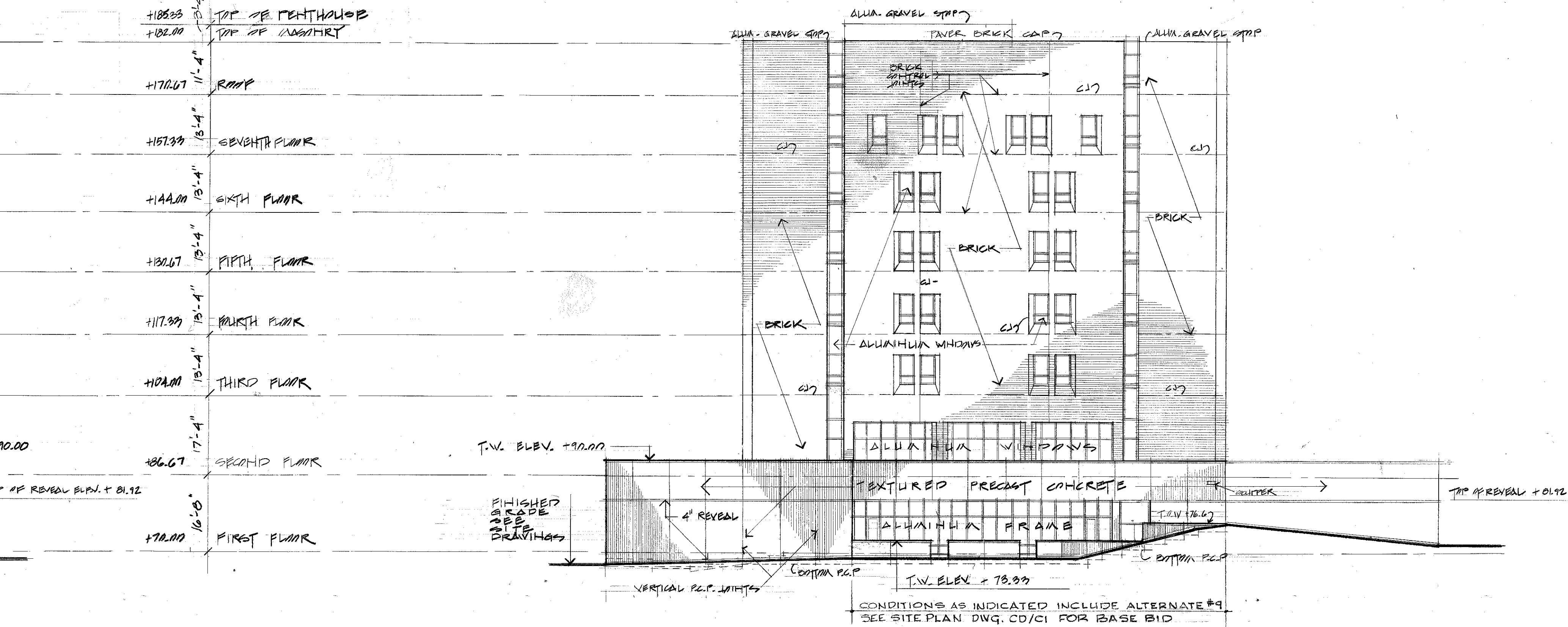


PLAN - SEVENTH FLOOR PENTHOUSE & ROOF



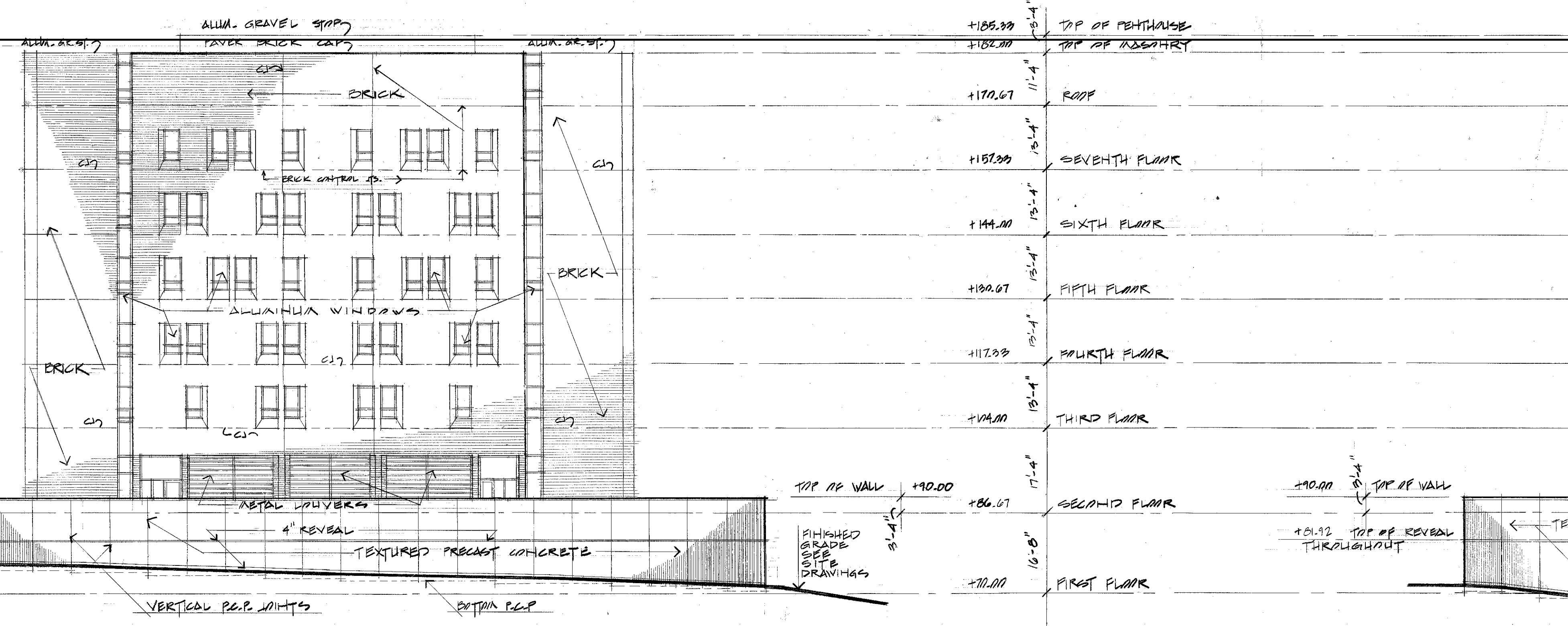
1 EAST ELEVATION  
S O A L E

$$1/16" = 1^{\circ} - 0"$$



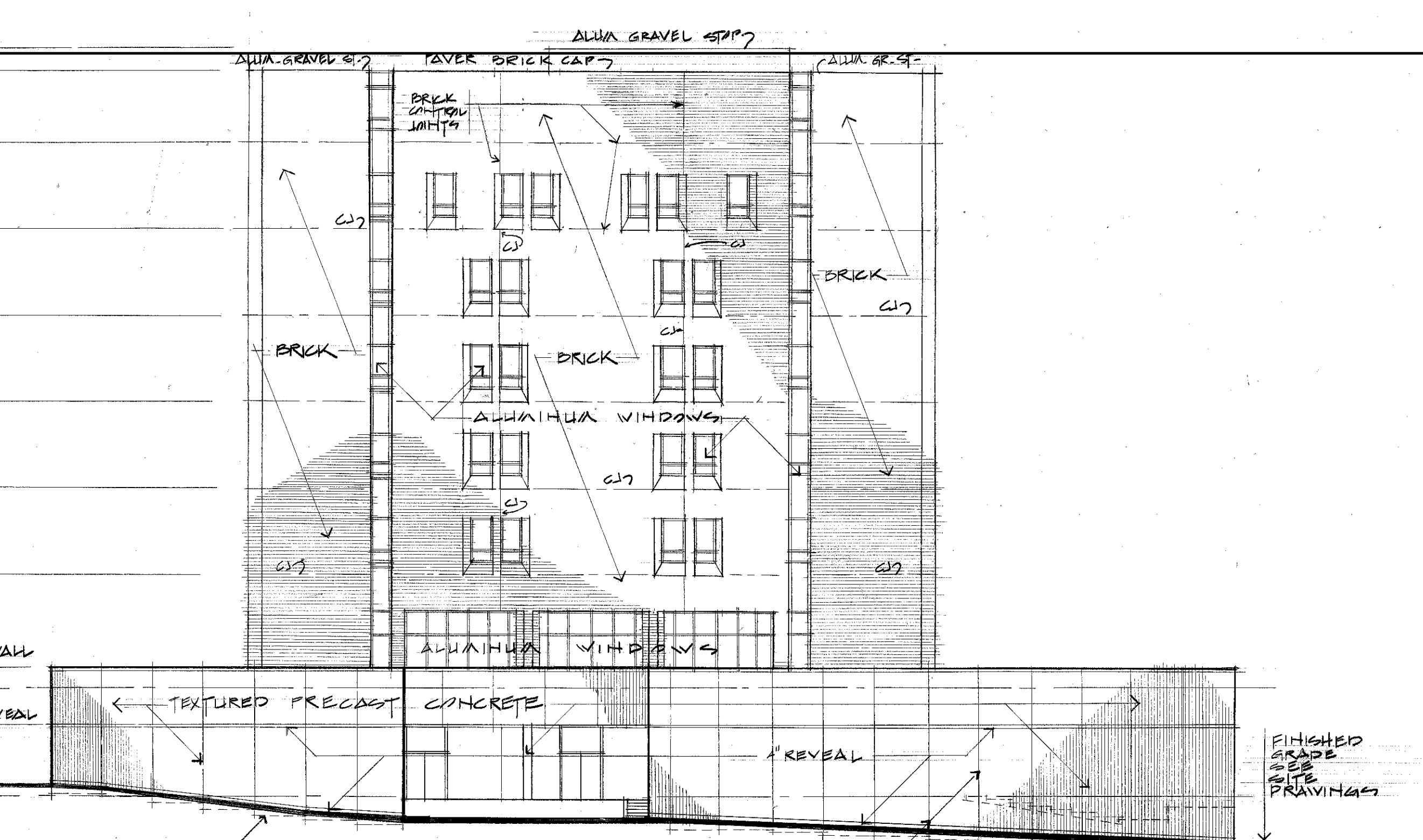
## 2. HORIZONTAL ELEVATION

$$1/16^n = 1 - \alpha$$



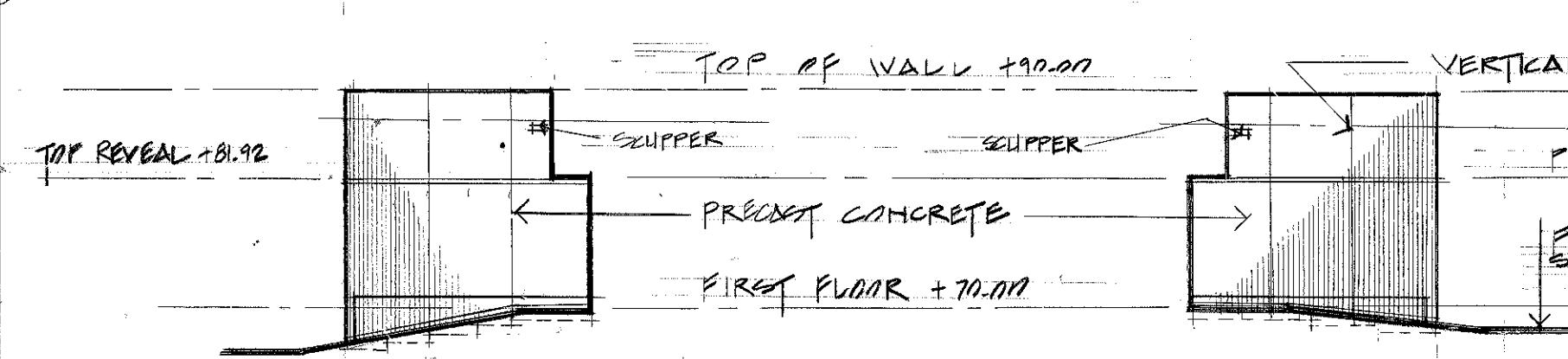
3. WEST ELEVATION

$$11\ 16'' = 1' - 7''$$



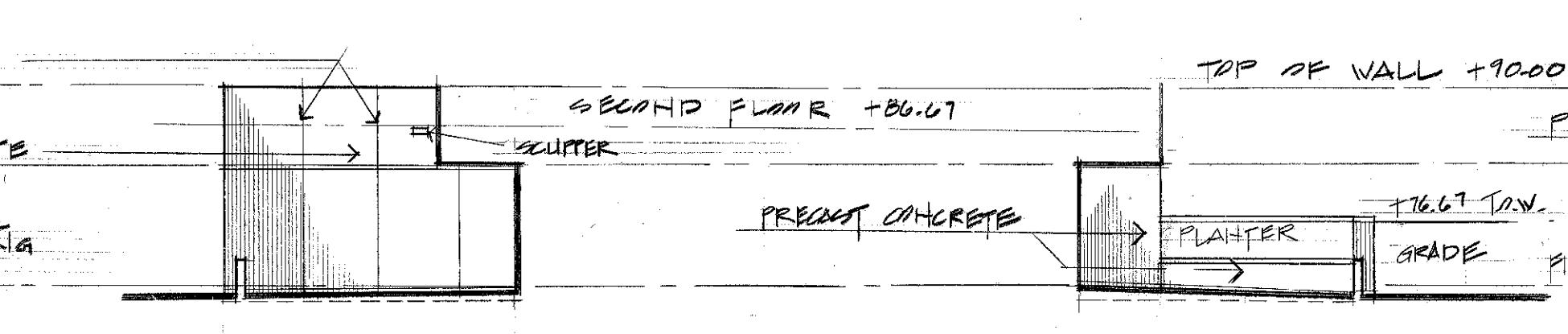
4. S O U T H     E     L E V A T I O N

$$1 / 16'' = 1 - \sigma$$



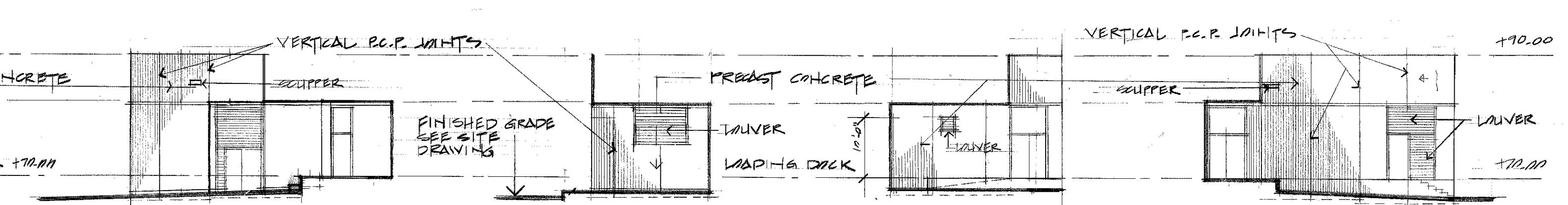
A) SOUTH

(3) H O R T H



Ⓐ EAST

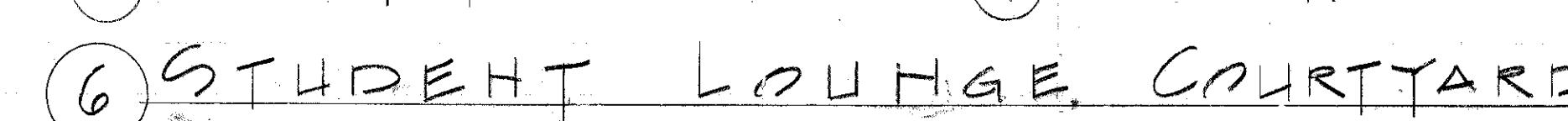
13) WEST



A W E S T

B) SOUTH

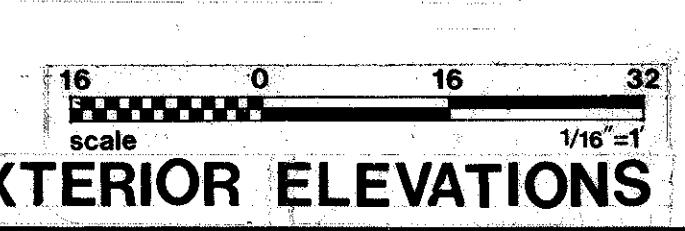
C H O R T H      P E A S T



⑥ STUDENT LOUNGE, COURTYARD



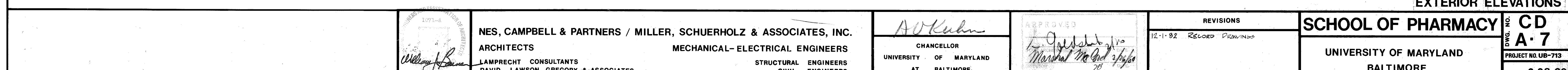
# 7 Loading Dock

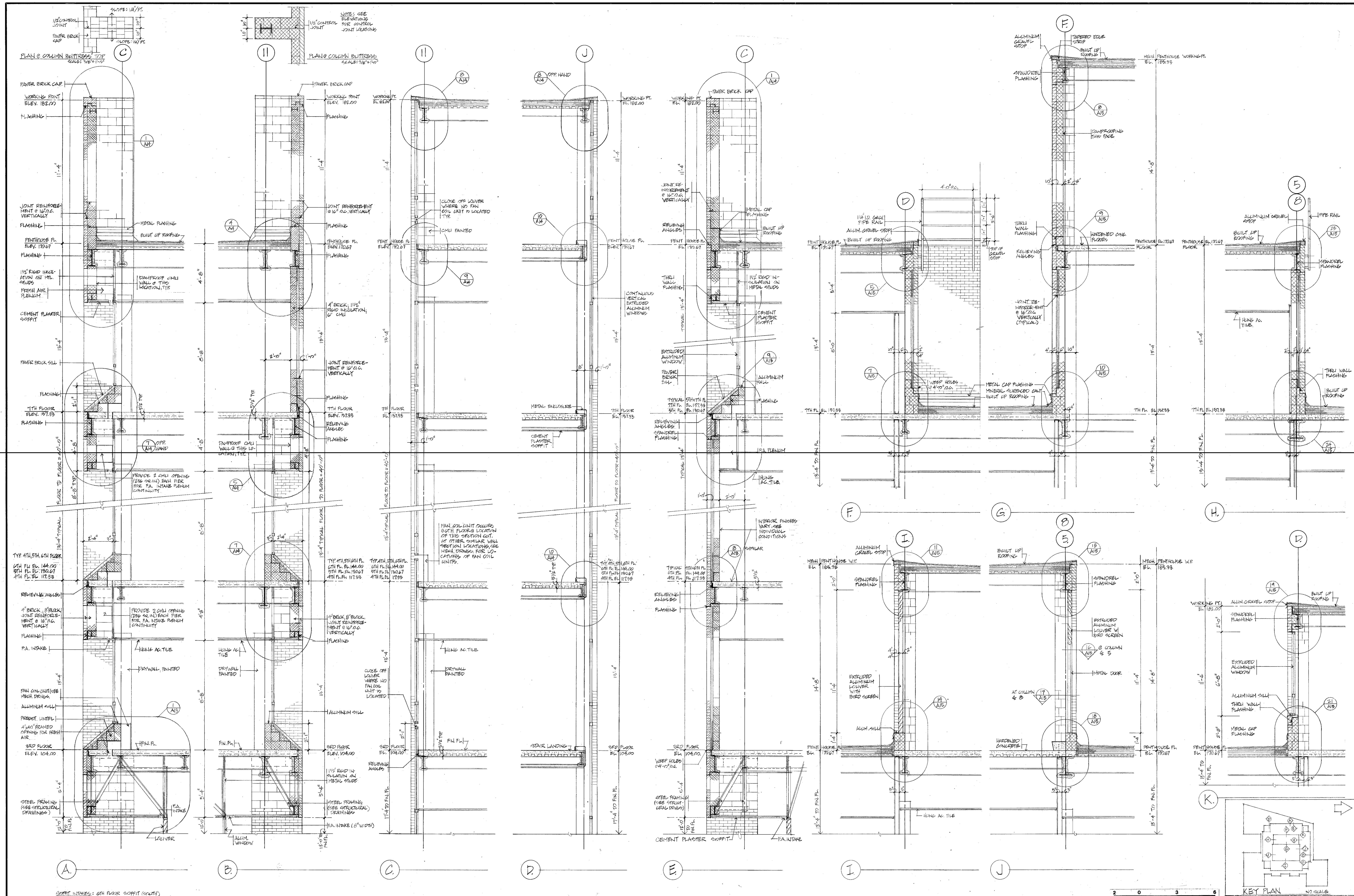


scale

1/16 = 1

# EXTERIOR ELEVATIONS





SECTIONS - THIRD THRU SEVENTH FLOORS

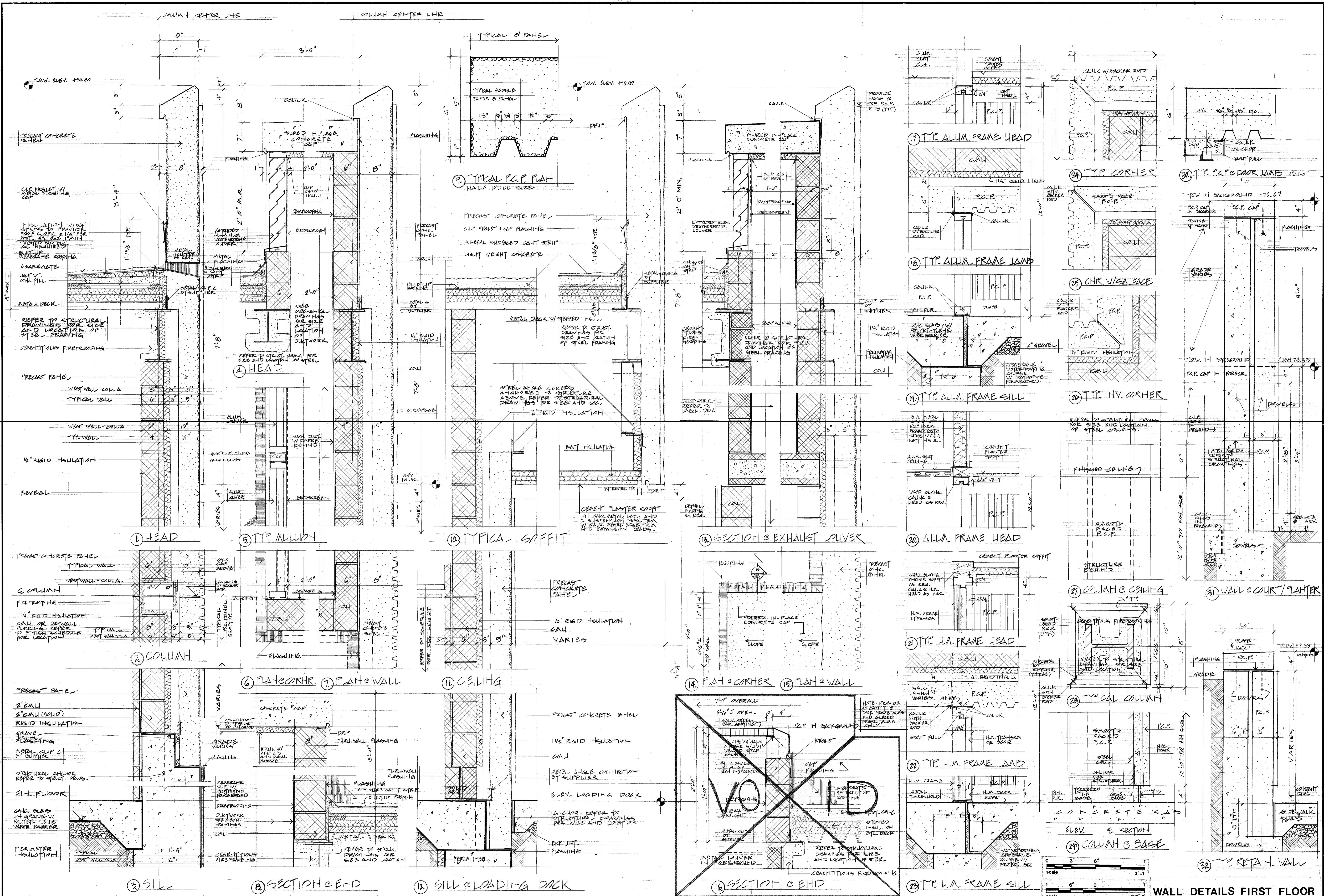
NES, CAMPBELL & PARTNERS / MILLER, SCHUERHOLZ & ASSOCIATES, INC.  
ARCHITECTS  
LAMPRECHT CONSULTANTS  
DAVID LAWSON GREGORY & ASSOCIATES  
MECHANICAL-ELECTRICAL ENGINEERS  
STRUCTURAL ENGINEERS  
CIVIL ENGINEERS


*A. O. Kuehn*  
CHANCELLOR  
UNIVERSITY OF MARYLAND  
AT BALTIMORE

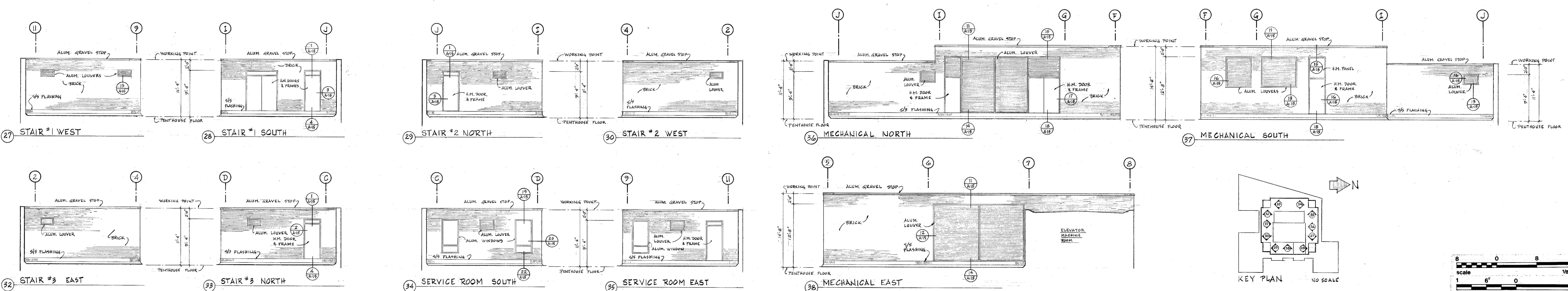
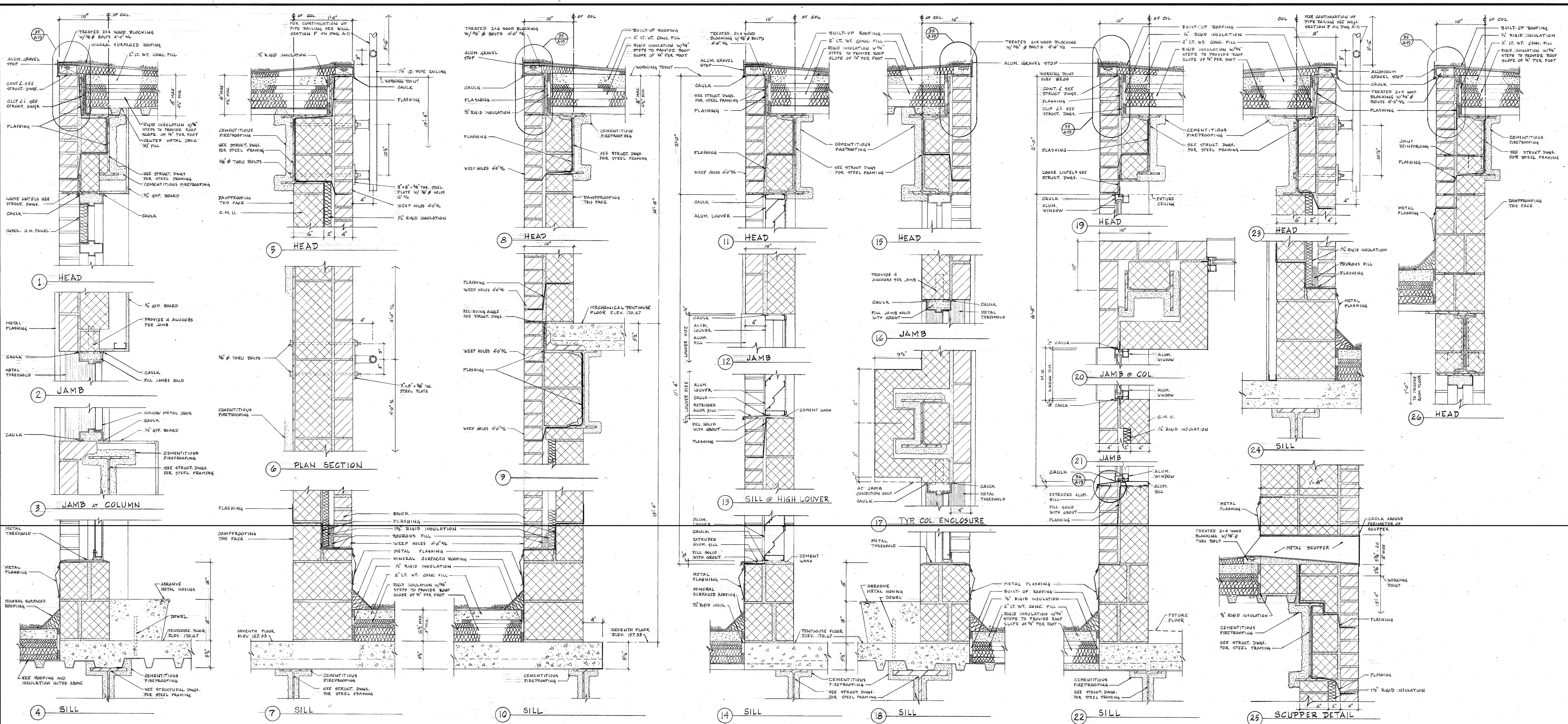
*J. A. Walsh, Jr.*  
Marshal McClellan, Jr.  
REVISIONS  
12-1-92 RECORD DRAWINGS

SCHOOL OF PHARMACY  
CD  
A-11  
Dwg. No. 12-1-92  
PROJECT NO. UB-713  
UNIVERSITY OF MARYLAND  
BALTIMORE

FILE NO. 19 - DWG. NO. 12-1-92  
DATE: 2-28-80







ELEVATIONS OF PENTHOUSES  
NOTE: FACING FOR EXTERIOR OF ALL WALLS WITHIN PERIMETER  
OF ROOF PARAPET WALL SHALL BE COMMON BRICK EXCEPT INSIDE FACE OF PARAPET SHALL BE CM.U.

SCALE: 1/8" = 1'-0"



12-1-82  
Nes, Campbell & Partners / Miller, Schuerholz & Associates, Inc.  
Architects  
Lamprecht Consultants  
David Lawson Gregory & Associates  
Mechanical-Electrical Engineers  
Structural Engineers  
Civil Engineers  
Civil Engineers

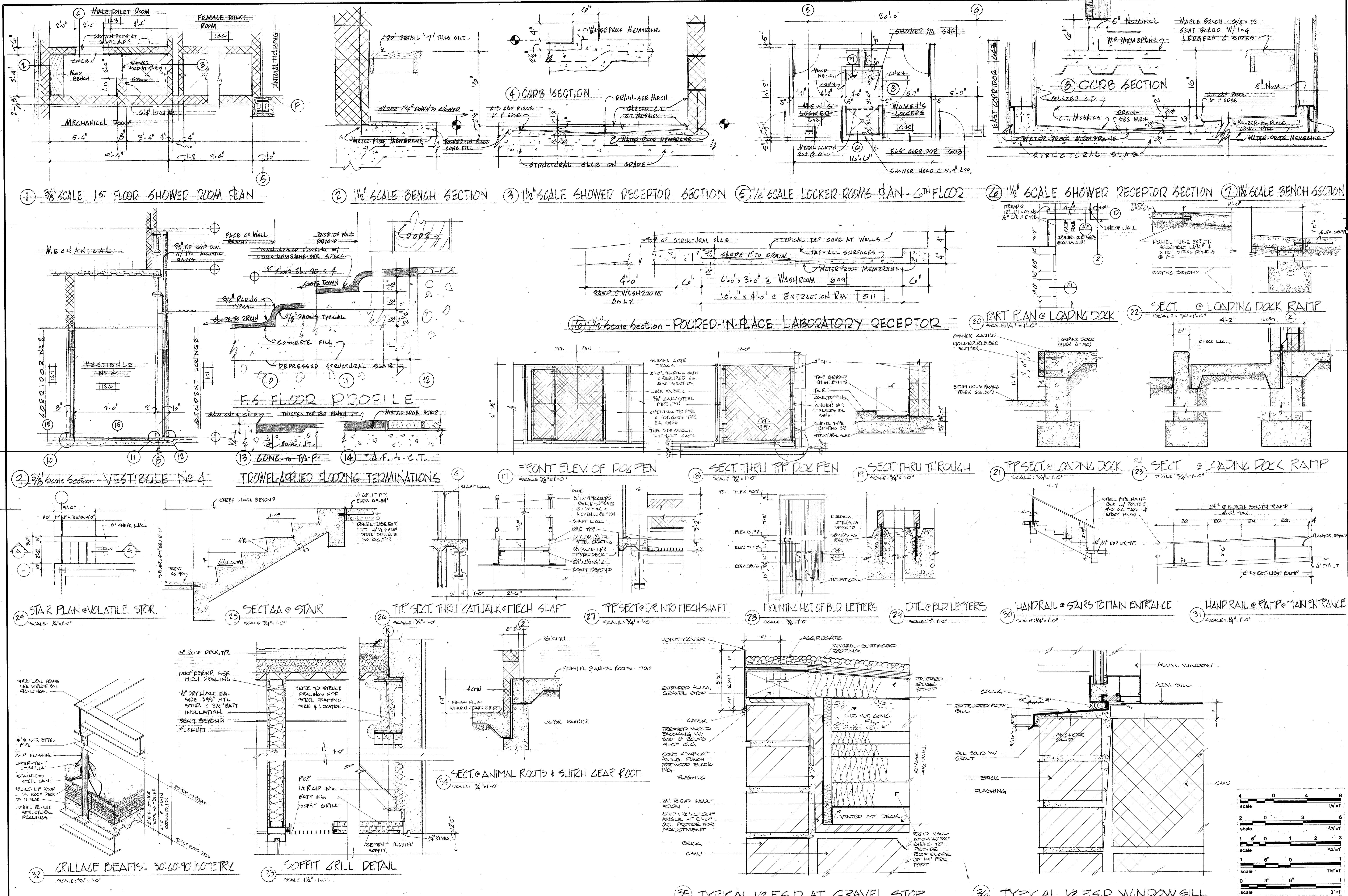
12-1-82  
A. Okuhn  
Chancellor  
University of Maryland  
at Baltimore

12-1-82  
J. G. Miller  
Marshall Melad  
RECORDED  
RECORD DRAWINGS

REVISIONS  
12-1-82

SCHOOL OF PHARMACY  
UNIVERSITY OF MARYLAND  
BALTIMORE  
FILE NO. 19 - DWG. NO. 1739841/UB-713

CD  
A-15  
Dwg. No. UB-713  
PROJECT NO. UB-713  
DATE: 2-28-80



Send Report To:

Steven Deck  
714 W. Lombard St.  
Baltimore, MD 21201

State of Maryland  
MDH - Laboratories Administration  
Division of Environmental Sciences  
**Air Quality Laboratory**  
1770 Ashland Avenue  
Baltimore, Maryland 21205

A620002-118  
Stamp Here

**LABORATORY ANALYSIS REQUEST**  
**BULK ASBESTOS MICROSCOPIC ANALYSIS**

County: Baltimore City Sample ID: UMB-002-19 Date Collected: 7/2/19  
Source & Nature of Sample: Old School of Pharmacy Upper Roof

Submitted By: Steven Deck Phone No: 410-706-7055

**PLM TEST RESULTS**

Analytical Method: EPA Methods 600/M4-82-020 and 600/R-93-116

Test Item Condition: Acceptable Sample Color: Black

Asbestos Fibers	Area Percent (A%)				Non-Asbestos Fibers	Area Percent (A%)			
	Layer 1	Layer 2	Layer 3	Total		Layer 1	Layer 2	Layer 3	Total
Chrysotile					Organic				<1
Amosite					Synthetic				
Crocidolite					Glass Wool/Rock Wool				
Anthophyllite					Other Fibers				
Actinolite					Non-Fibrous Particulate				>99
Tremolite					Other				
TEM Analysis Recommended (Y/N)					Layer 1				
Layered (Y/N)					Layer 2				
					Layer 3				

Comments: email report to sdeck@maryland.edu

Analyst: K. Hegde

Date Analyzed: 7/12/19

Verifier: M. Simms

Date Analyzed: 7/12/19

Lab Supervisor: Shane A.

Date Reported: 7/15/19

This report shall not be reproduced except in full without the written approval of the laboratory. Results are only valid for samples received. Samples are tested as received.

Phone: (443) 681-3763

Fax: (443) 681-4507

Send Report To:

Steven Deck  
714 W. Lombard St.  
Baltimore, MD 21201

State of Maryland  
MDH - Laboratories Administration  
Division of Environmental Sciences  
**Air Quality Laboratory**  
1770 Ashland Avenue  
Baltimore, Maryland 21205

1620003-112

Stamp Here

**LABORATORY ANALYSIS REQUEST**  
**BULK ASBESTOS MICROSCOPIC ANALYSIS**

County: Baltimore City Sample ID: UMB-003-19 Date Collected: 7/2/19  
Source & Nature of Sample: Old School of Pharmacy X Lower Roof

Submitted By: Steven Deck

Phone No: 410-706-7055

**PLM TEST RESULTS**

Analytical Method: EPA Methods 600/M4-82-020 and 600/R-93-116

Test Item Condition: Acceptable Sample Color: Black

Asbestos Fibers	Area Percent (A%)				Non-Asbestos Fibers	Area Percent (A%)			
	Layer 1	Layer 2	Layer 3	Total		Layer 1	Layer 2	Layer 3	Total
Chrysotile					Organic				< 1
Amosite					Synthetic				
Crocidolite					Glass Wool/Rock Wool				
Anthophyllite					Other Fibers				
Actinolite					Non-Fibrous Particulate				> 99
Tremolite					Other				
TEM Analysis Recommended (Y/N)				Layer 1					
Layered (Y/N)				Layer 2					
				Layer 3					

Comments: email report to sdeck@umaryland.edu

Analyst: K. Hegde

Date Analyzed: 7/12/19

Verifier: J. Simms

Date Analyzed: 7/12/19

Lab Supervisor: Steve C.

Date Reported: 7/15/19

This report shall not be reproduced except in full without the written approval of the laboratory. Results are only valid for samples received. Samples are tested as received.

Phone: (443) 681-3763

Fax: (443) 681-4507

## Form A Pullout Test Report

(Refer to the **Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners** for full documentation)

**Job name:** Pharmacy South

**Location:** 20 North Pine Street - Baltimore, MD

<b>Test date:</b> 11/1/2016	<b>Ambient temperature:</b> 55 °
<b>Roof area:</b> sq. ft	<b>Tester mfg:</b> DMD Force Measurement Systems
<b>Max. cap. of tester:</b> 2,000 lbs	<b>Select one:</b> <input checked="" type="checkbox"/> lbf <input type="checkbox"/> kN
<b>Date of last calibration:</b> 7/1/2016	<b>Number of pulls recorded on Form B:</b> 11
<b>Fastener tested:</b> FM-290	<b>Fastener manufacturer:</b> ES Products/Trufast
<b>Fastener tested:</b> #14 HD - 8"	<b>Fastener manufacturer:</b> Trufast
<b>Fastener tested:</b>	<b>Fastener manufacturer:</b>

**Test performed by:** Ty Shedleski

<b>Witnessed by:</b> Rick F.	<b>Test cut areas repaired by:</b> Tecta America
------------------------------	--

**Project type (select one):**  New construction  Tear off  Retrofit

**Deck type (select one):**

<input type="checkbox"/> Steel	Gauge:	
<input type="checkbox"/> Structural concrete	Thickness:	Select one: <input type="checkbox"/> Poured in place <input type="checkbox"/> Precast
<input type="checkbox"/> Lightweight concrete	Thickness:	
<input type="checkbox"/> Insulating concrete	Thickness:	
<input type="checkbox"/> Cementious wood fiber	Thickness:	
<input checked="" type="checkbox"/> Gypsum	Thickness: 3"	Select one: <input checked="" type="checkbox"/> Poured in place <input type="checkbox"/> Precast
<input type="checkbox"/> Wood	Thickness:	Select one: <input type="checkbox"/> OSB <input type="checkbox"/> Plywood <input type="checkbox"/> Plank
<input type="checkbox"/> Fiberglass	Thickness:	
<input type="checkbox"/> Other: _____	Thickness:	

**Embedment or protrusion:** 1.7" & 1"

**Drill bit diameter, where applicable:**

## Optional Information

**Test time:** \_\_\_\_\_ **Building height:** \_\_\_\_\_ **Thickness of existing roof assembly:** \_\_\_\_\_

**New system manufacturer:**

**Roof cover type (select one):**

<input type="checkbox"/> Mechanically attached single-ply	<input type="checkbox"/> Modified bitumen
<input type="checkbox"/> Ballasted single-ply	<input type="checkbox"/> Built-up roofing
<input type="checkbox"/> Adhered single-ply	<input type="checkbox"/> Other: _____

**New insulation:**

Type: \_\_\_\_\_ Thickness: \_\_\_\_\_

## Form B Pullout Test Report

Report all test results and units of measure.

### Conversion formulas

$$\text{lbf} \times .00448222 = \text{kN} \times 224.8089431 = \text{lbf}$$

1. 43 - FM-290	6. 726	11. 595	16.
2. 438	7. 495	12.	17.
3. 371	8. 444	13.	18.
4. 502	9. 448	14.	19.
5. 611	10. 453	15.	20.

### Pullout Results of Additional Tests Performed (See C4.5.)

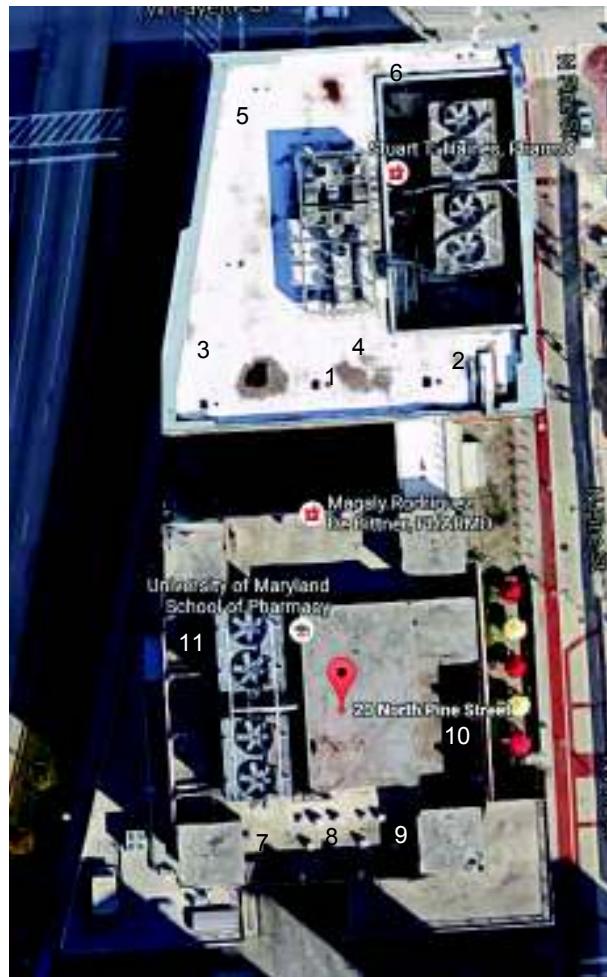
21.	26.	31.	36.
22.	27.	32.	37.
23.	28.	33.	38.
24.	29.	34.	39.
25.	30.	35.	40.

Deviation from standard procedure authorized by:

### Reason for deviation:

Pull #6 had a thicker roofing assembly and required a 10" fastener to be used.

**Roof plan not to scale.** Identify where the pullouts were performed with corresponding test number.



#### Comments

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**Disclaimer:** Manufacturer's installation requirements shall be followed when using any of the tested fasteners. Neither the technician performing the pullout tests nor his/her company is responsible for the waterproofing integrity of the repairs. This test report does not certify the structural integrity of the roof deck.



---

## **NUCLEAR BACKSCATTER INSPECTION**

**UMB School of Pharmacy**

**FOR:**

University of Maryland-Baltimore  
Mr. Brent Waggoner

**DATE:**

September 25, 2019

**BY:**

Infrared Predictive Surveys, Inc.  
PO Box 224  
Adamstown, MD 21710

Phone: 301-831-1978  
Toll Free: 800-869-3720  
Fax: 301-874-2295



---

## SYNOPSIS

A Nuclear Backscatter survey was made at the UMB School of Pharmacy. Visual observations have been made and the data has been documented.

## INTRODUCTION

This report has been prepared for the exclusive use of Brent Waggoner at the University of Maryland-Baltimore, for the specific application of the roofs at the UMB School of Pharmacy.

### **Authorization**

Authorization to perform this evaluation, analysis and Nuclear Backscatter roof scan was in the form of a written agreement between Brent Waggoner at University of Maryland-Baltimore and Infrared Predictive Surveys Inc. (IPSI)

### **Scope**

The scope of the roof survey included nuclear backscatter testing. Data from this survey has been incorporated into this final report.

### **Purpose**

The purpose of the roof survey was to gain an overview of the condition of the roof areas.

### **General**

Observations described in this report are based upon roof at the time of the survey and these conditions may change as the roof ages.

Infrared Predictive Surveys, Inc. warrants that these findings are published after being prepared in accordance with generally accepted practices of the construction industry. No other warranties are implied or expressed.

## TEST INSTRUMENT DESCRIPTION

(Only testing that has been completed during your survey will be checked.)

### **Infrared Testing**

The infrared roof survey locates moisture in a roof by seeking areas of increased surface temperature. Roof areas that contain moisture have higher thermal conductivity and capacitance than dry areas. During the heating season, heat from the building interior is lost at a greater rate through wet roof areas and their surface temperatures are elevated. Alternatively, during the cooling season, solar heat is absorbed into the wet area, and then retained for hours after the sun sets.

When viewed through the infrared imager, wet areas appear as brighter, lighter tones of gray in black-and-white images. Alternatively, in color images, wet areas will appear as hotter colors. A color scale appears at the side of color images. As colors progress upward, temperatures increase. In general, the higher the concentration of water, the higher the surface temperatures.

Because higher surface temperatures, and consequently hotter colors, may be produced by several phenomena not related to moisture intrusion, tests are made to verify the findings of the infrared inspection using destructive testing (core cuts) and other non-destructive tests (capacitance & nuclear). Wet areas found by infrared testing are illustrated with thermograms (photographs of infrared images).

### **Capacitance Verification (Hand Held Tramex Meter)**

The Tramex capacitance meter is a mobile device that is used for detecting relative moisture content of roof areas. This non-destructive testing method is often combined with nuclear and thermal testing and/or moisture intrusion testing to accurately identify water entry pathways and areas of entrapped water. The Tramex moisture meter is designed for testing built up roofing and non-conductive single ply membrane. It provides instantaneous, clear indications of roof conditions and is able to detect as little as 2% excess moisture in roofing systems.

**Core Sampling**

Core samples consist of cuts through the roof membrane. The sample provides an absolute test of moisture content and location. The core cut also permits the constituents of the roof system, and their condition, to be determined. Core sample may be weighed, dried and reweighed to provide a quantitative measure of moisture content.

A cut is made into the roof with a two inch (2") circumference roof sampling tool. The repaired core cuts are made with an appropriate material.

**Nuclear Backscatter**

A radioactive isotope consisting of Americium-241 with a Beryllium target is utilized. The measurement method relies on the thermalization (slowing) of fast neutrons by the hydrogen atoms in water. Since other Hydrogen bearing materials also thermalize neutrons, a measurement survey is necessary to establish a relative base level before an analysis can be performed.

## EQUIPMENT USED

- The qualitative infrared scan was conducted by a certified thermographer using a Mikron 7515 uncooled infrared imager. Lens for the Mikron was 29 degree FOV, 320 X 240 array with 7.5-13 spectral response. Temperature sensitivity is .1 degree C with accuracy of 2%.
- Inframetrics-ThermaCAM PM390. Temperature sensitivity is <0.1 degree C with a spectral response of 3.4 to 5  $\mu$ m and a focal array of 256 x 256.
- FLIR PM390 Mid-wave camera.
- The qualitative infrared scan was conducted by a certified thermographer using a Mikron 7600 Pro. Lens was a 21-degree FOV lens, 320 X 240 focal plane array with 7.5-13 spectral response. Temperature sensitivity is .1 degree C with accuracy of 2%.
- Troxler 3210 Nuclear Moisture Gauge



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## FIELD SURVEY METHODS

### Visual Observations

Visual observations were made by Infrared Predictive Surveys, Inc. (IPSI) personnel. These observations included roofing structure, roof drainage, roof surface conditions and other accessory items.

### Photographic Documentation

Photographs were made by IPSI personnel. While these photographs were not intended to provide a complete record of the roof, they do provide a visual description of typical roof conditions or selected problem areas.

## PROJECT IDENTIFICATION

### Project Location

20 N. Pine St., Baltimore, MD 21201

## NUCLEAR BACKSCATTER ROOF SCAN

### Date of Scan: September 4, 2019

This scan was performed in conjunction with the visual roof survey conducted the same day. The purpose of this scan was to locate areas of suspected subsurface moisture and determine the extent of the moisture migration.

### Environmental Conditions

September 4, 2019-Maximum daytime temperature: 95°F.

## FINDINGS AND RESULTS

Roof designations (A-I) were made by IPSI personnel for reporting purposes only. Core sampling was declined by the client.

### Roof A

- Eight (8) suspected wet areas were found on this roof section.

### Roof B

- One (1) suspected wet area was found on this roof section.

### Roof C

- Three (3) suspected wet areas were found on this roof section.

### Roof D

- Two (2) suspected wet areas were found on this roof section.

### Roof E

- Two (2) suspected wet areas were found on this roof section.

### Roof F

- Two (2) suspected wet areas were found on this roof section.

### Roof G

- No thermal anomalies were noted on this roof section.

### Roof H

- One (1) suspected wet area was found on this roof section.

### Roof I

- Nine (9) suspected wet areas were found on this roof section.



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Core sampling was not allowed, but it is recommended to verify findings, especially near edges with high readings. These could be due to moisture, but can also be caused by a build-up of roofing materials in these areas.



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If additional information is required, please do not hesitate to contact me. Thank you again for giving us the opportunity to provide our services.

Sincerely,

**Joseph Fitzpatrick**  
Infrared Predictive Surveys, Inc.  
PO Box 224  
Adamstown, MD 21710

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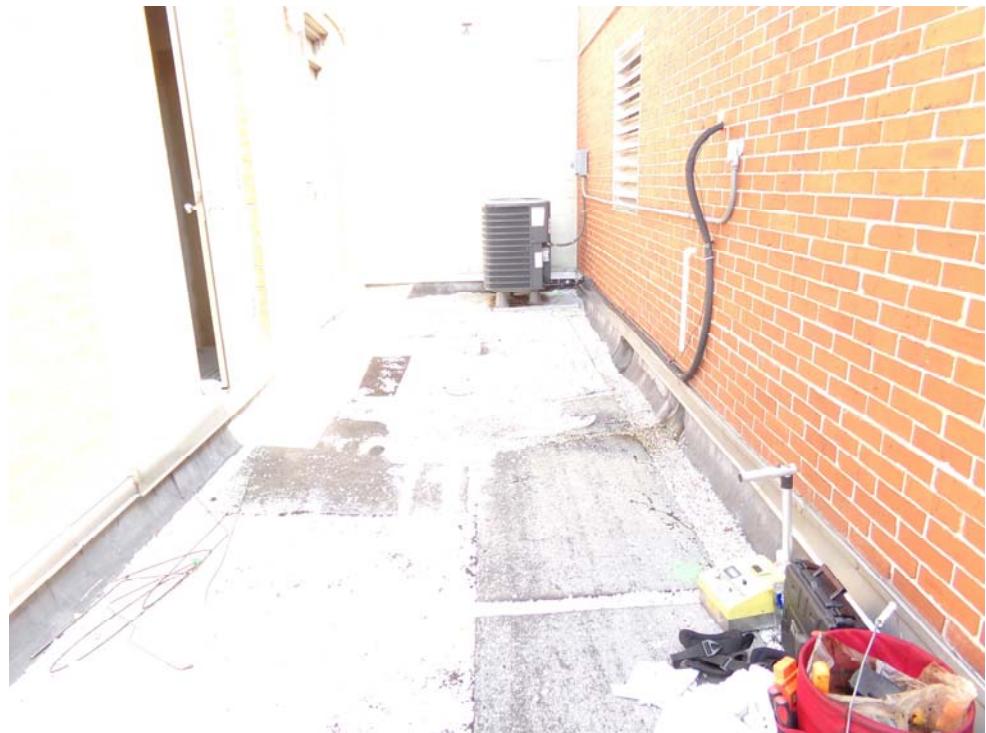
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## APPENDIX

- Digital Photographs
- CAD Drawing



School of Pharmacy Building



Pharmacy Roof A-East neck, looking East



Pharmacy Roof A-East side, looking South



Pharmacy Roof A-South side, looking West



Pharmacy Roof A-West side, looking South



Pharmacy Roof B-Looking South



Pharmacy Roof C-Looking East



Pharmacy Roof D-Looking South



Pharmacy Roof E-Looking South



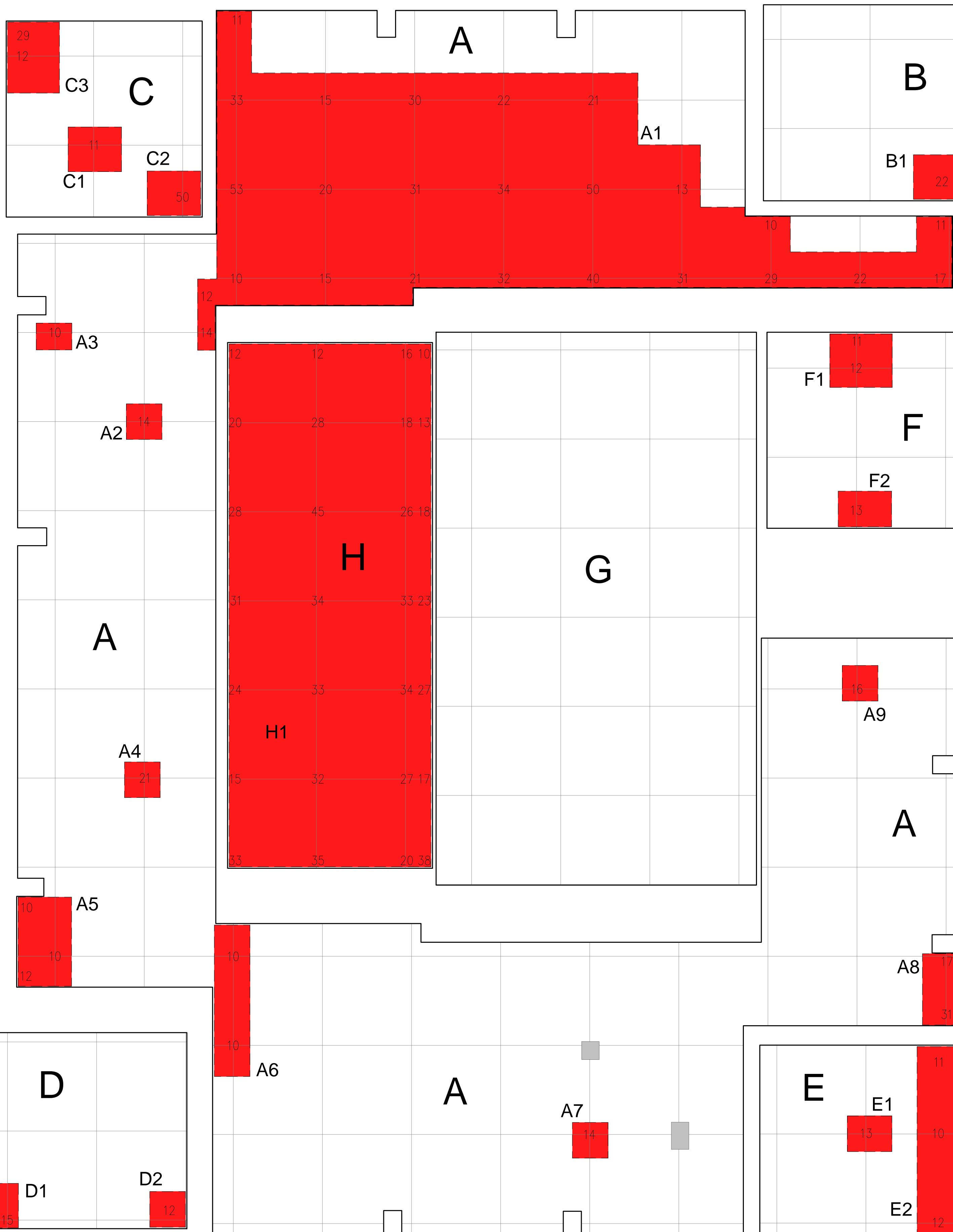
Pharmacy Roof F-Looking South



Pharmacy Roof G-LookingSouth



Pharmacy Roof H-Looking South



SCAN NOTES:

- GRAY ROOF INDICATES AREA NOT SCANNED
- SUSPECTED MOISTURE AREAS SHADED RED
- NUCLEAR READINGS TAKEN ON A 10'x10' GRID
- CC# = CORE CUT NUMBER, P# = PROBE NUMBER
- DATE OF SCAN : 09.04.19

ROOF SCAN OVERVIEW



'A' TOTAL SUSPECTED WET SQ FT = 1730

AREA	SIZE	SQ FT	NOTES
A1	84 x 33	1510	*SEE DRAWING
A2	4 x 4	16	-
A3	4 x 3	12	-
A4	4 x 4	16	-
A5	6 x 10	60	-
A6	4 x 17	68	-
A7	4 x 4	16	-
A8	4 x 8	32	-

'B' TOTAL SUSPECTED WET SQ FT = 25

AREA	SIZE	SQ FT	NOTES
B1	5 x 5	25	-

'C' TOTAL SUSPECTED WET SQ FT = 108

AREA	SIZE	SQ FT	NOTES
C1	6 x 5	30	-
C2	6 x 5	30	-
C3	6 x 8	48	-

'D' TOTAL SUSPECTED WET SQ FT = 31

AREA	SIZE	SQ FT	NOTES
D1	3 x 5	15	-
D2	4 x 4	16	-

'E' TOTAL SUSPECTED WET SQ FT = 108

AREA	SIZE	SQ FT	NOTES
E1	5 x 4	20	-
E2	4 x 22	88	-

'F' TOTAL SUSPECTED WET SQ FT = 66

AREA	SIZE	SQ FT	NOTES
F1	7 x 6	42	-
F2	6 x 4	24	-

'H' TOTAL SUSPECTED WET SQ FT = 1357

AREA	SIZE	SQ FT	NOTES
H1	23 x 59	1357	-

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BALTIMORE, MD 21201

BUILDING ROOF - MOISTURE SCAN

INFRARED PREDICTIVE SURVEYS INCORPORATED	DRAWN:	DATE DRAWN:	REV:	SHEET NO.
AJR	09/25/19	0		776A



'I' TOTAL SUSPECTED WET SQ FT = 351					
AREA	SIZE		SQ FT	NOTES	
	5	x	3	15	—
	12	x	6	58	*SEE DRAWING
	4	x	4	16	—
	3	x	4	12	—
	18	x	13	138	*SEE DRAWING
	6	x	14	55	*SEE DRAWING
	3	x	4	12	—
	3	x	3	9	—
	4	x	9	36	—

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BALTIMORE, MD 21201

# BUILDING ROOF - MOISTURE SCAN



ED VE YS TED	DRAWN:	DATE DRAWN:	REV:	SHEET NO.
	AJR	09/25/19	0	776B

## SCAN NOTES:

- GRAY ROOF INDICATES AREA NOT SCANNED
- SUSPECTED MOISTURE AREAS SHADED **RED**
- NUCLEAR READINGS TAKEN ON A 10' x 10' GRID
- CC# = CORE CUT NUMBER, P# = PROBE NUMBER
- DATE OF SCAN : 09.04.19

# ROOF 'I' SCAN OVERVIEW