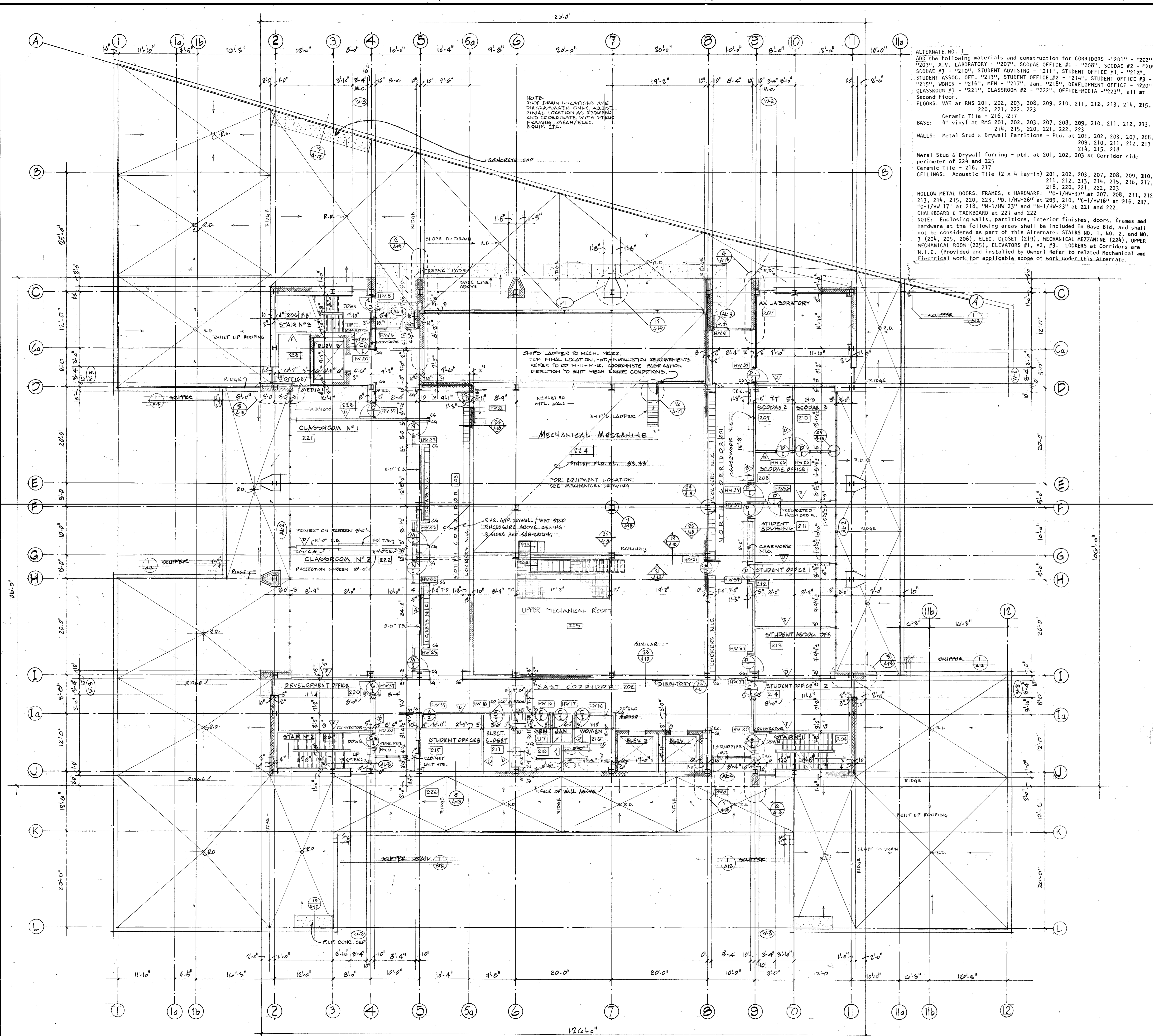
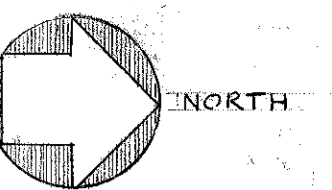


School of Pharmacy (SOP) – South Documents:

- 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



ROOM NO.	SPACE DESIGNATION	FLOOR	BASE	WALLS	CEILING	CLS. HT.	REMARKS
201	NORTH CORRIDOR	V.A.T.	4" Vinyl Cove	Drywall Pcd. (Acrylic Epoxy)	Acoustical Tile Type-1	8'-0"	
202	EAST CORRIDOR	V.A.T.	4" Vinyl Cove	Drywall Pcd. (Acrylic Epoxy)	Acoustical Tile Type-1	8'-0"	
203	SOUTH CORRIDOR	V.A.T.	4" Vinyl Cove	Drywall Pcd. (Acrylic Epoxy)	Acoustical Tile Type-1	8'-0"	(Locker Corridor)
204	STAIR NO. 1		Hardwood Concrete	Hardwood Pcd. (Acrylic Epoxy)	Cement Plaster (Unptd.)	varies	East alum. abra. nos. 9 Terr. tile 2nd flr. ldg.
205	STAIR NO. 2		Hardwood Concrete	Hardwood Pcd. (Acrylic Epoxy)	Cement Plaster (Unptd.)	varies	East alum. abra. nos. 9 Terr. tile 2nd flr. ldg.
206	STAIR NO. 3		Hardwood Concrete	Hardwood Pcd. (Acrylic Epoxy)	Cement Plaster (Unptd.)	varies	East alum. abra. nos. 9 Terr. tile 2nd flr. ldg.
207	A.V. LAB.		Carpet	4" Vinyl Cove	Acoust. Tile	8'-0"	
208	SCODAE OFFICE NO. 1	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
209	SCODAE OFFICE NO. 2	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
210	SCODAE OFFICE NO. 3	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
211	STUDENT ADVISING #1	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
212	STUDENT OFFICE #1	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
213	STUDENT ASSOC. OFFICE	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
214	STUDENT OFFICE #2	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
215	STUDENT OFFICE #3	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
216	CHALKBOARD & TACKBOARD		Ceramic Tile	Ceramic Tile	Acoust. Tile Type-1	8'-0"	
217	MEN (TOILET)		Ceramic Tile	Ceramic Tile	Acoust. Tile Type-1	8'-0"	
218	JANITOR		Hardwood Concrete	Hardwood Concrete	Acoust. Tile Type-1	8'-0"	
219	ELECT. CLOSET		Hardwood Concrete	Hardwood Concrete	Exposed Struct.	Unptd.	
220	DEVELOPMENT OFFICE	V.A.T.	4" Vinyl Cove	Drywall Pcd. (Acrylic Epoxy)	Acoust. Tile Type-1	8'-0"	
221	CLASSROOM #1	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	12'-0"	
222	CLASSROOM #2	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	12'-0"	
223	OFFICE/MEDIA	V.A.T.	4" Vinyl Cove	Drywall Pcd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
224	MECHANICAL MEZZANINE UPPER MECH.		Hardwood Conc.	Unptd.	Acoust. CHU Unptd.	varies	Cap. struct. w/ Sprayed-on f.p. (OPEN to 1st fl.)

ALTERNATE NO. 1
 ADD THE FOLLOWING MATERIALS AND CONSTRUCTION FOR CORRIDORS #201 - #202, #203, A.V. LABORATORY - #207, SCODAE OFFICE #1 - #208, SCODAE #2 - #209, SCODAE #3 - #210, STUDENT ADVISING - #211, STUDENT OFFICE #1 - #212, STUDENT ASSOC. OFF. #213, STUDENT OFFICE #2 - #214, STUDENT OFFICE #3 - #215, MEN - #216, MEN - #217, Jan. #218, DEVELOPMENT OFFICE - #220, CLASSROOM #1 - #221, CLASSROOM #2 - #222, OFFICE-MEDIA - #223, all at Second Floor.
 FLOORS: VAT at RMS 201, 202, 203, 208, 209, 210, 211, 212, 213, 214, 215, 220, 221, 222, 223
 Ceramic Tile - #216, 217
 BASE: 4" vinyl at RMS 201, 202, 203, 207, 208, 209, 210, 211, 212, 213, 214, 215, 218
 WALLS: Metal Stud & Drywall Partitions - Pcd. at 201, 202, 203, 207, 208, 209, 210, 211, 212, 213
 Metal Stud & Drywall furring - pcd. at 201, 202, 203 at Corridor side perimeter of 224 and 225
 Ceramic Tile - #216, 217
 CEILING: Acoustic Tile (2 x 4 lay-in) 201, 202, 203, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 220, 221, 222, 223
 HOLLOW METAL DOORS, FRAMES, & HARDWARE: "C-1/HW-37" at 207, 208, 211, 212, 213, 214, 215, 220, 223, "D-1/HW-26" at 209, 210, "C-1/HW-1" at 216, 217, "C-1/HW-17" at 218, "M-1/HW-23" and "M-1/HW-23" at 221 and 222.
 CHALKBOARD & TACKBOARD at 221 and 222
 NOTE: Enclosing walls, partitions, interior finishes, doors, frames and hardware at the following areas shall be included in Base Bid, and shall not be considered as part of this Alternate: STAIRS NO. 1, NO. 2, and NO. 3 (204, 205, 206), ELEC. CLOSET (219), MECHANICAL MEZZANINE (224), UPPER MECHANICAL ROOM (225), ELEVATORS #1, #2, #3, LOCKERS at Corridors are N.I.C. (Provided and installed by Owner) Refer to related Mechanical and Electrical work for applicable scope of work under this Alternate.

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.

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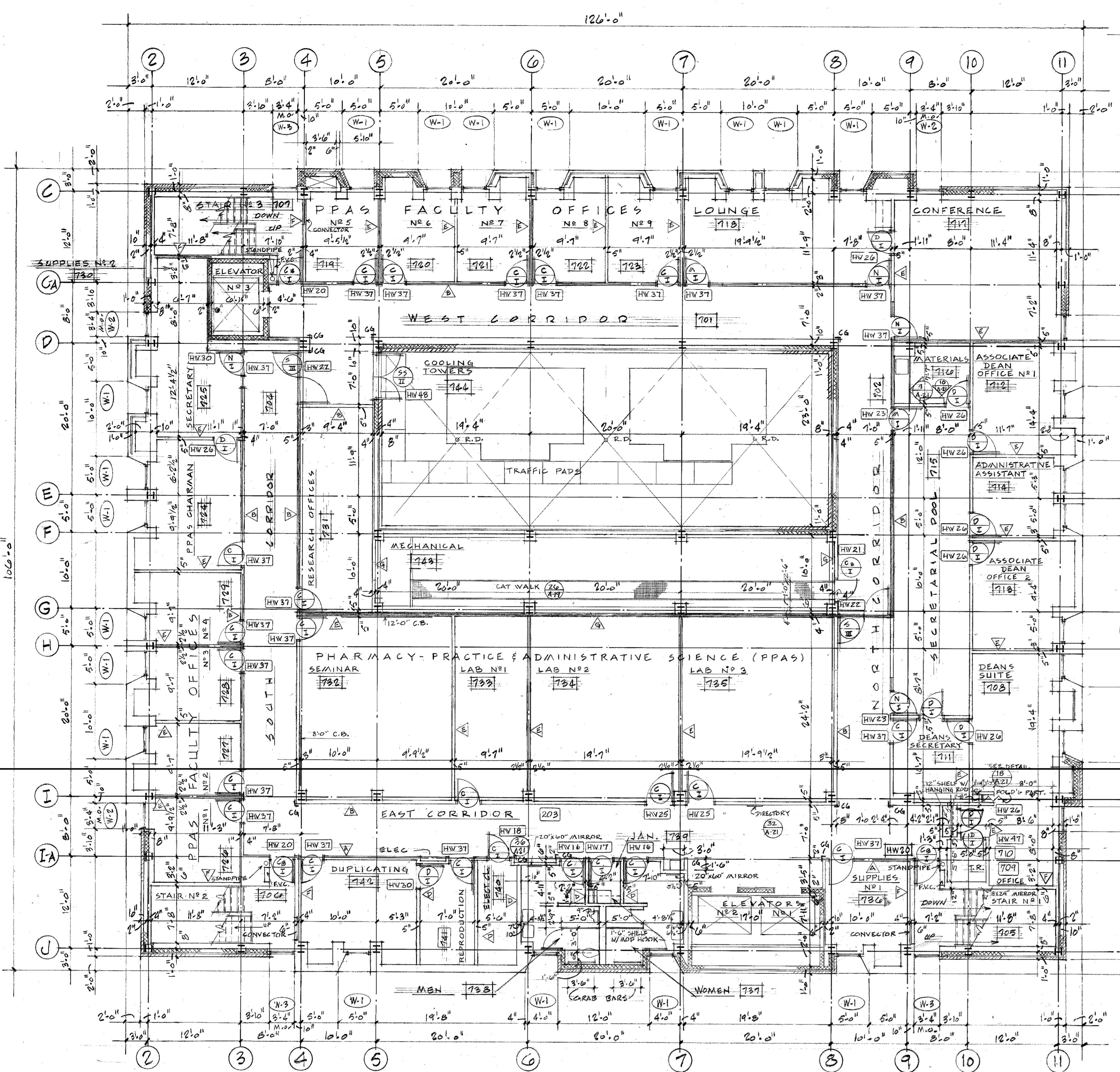
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S. G. ...
 DIRECTOR

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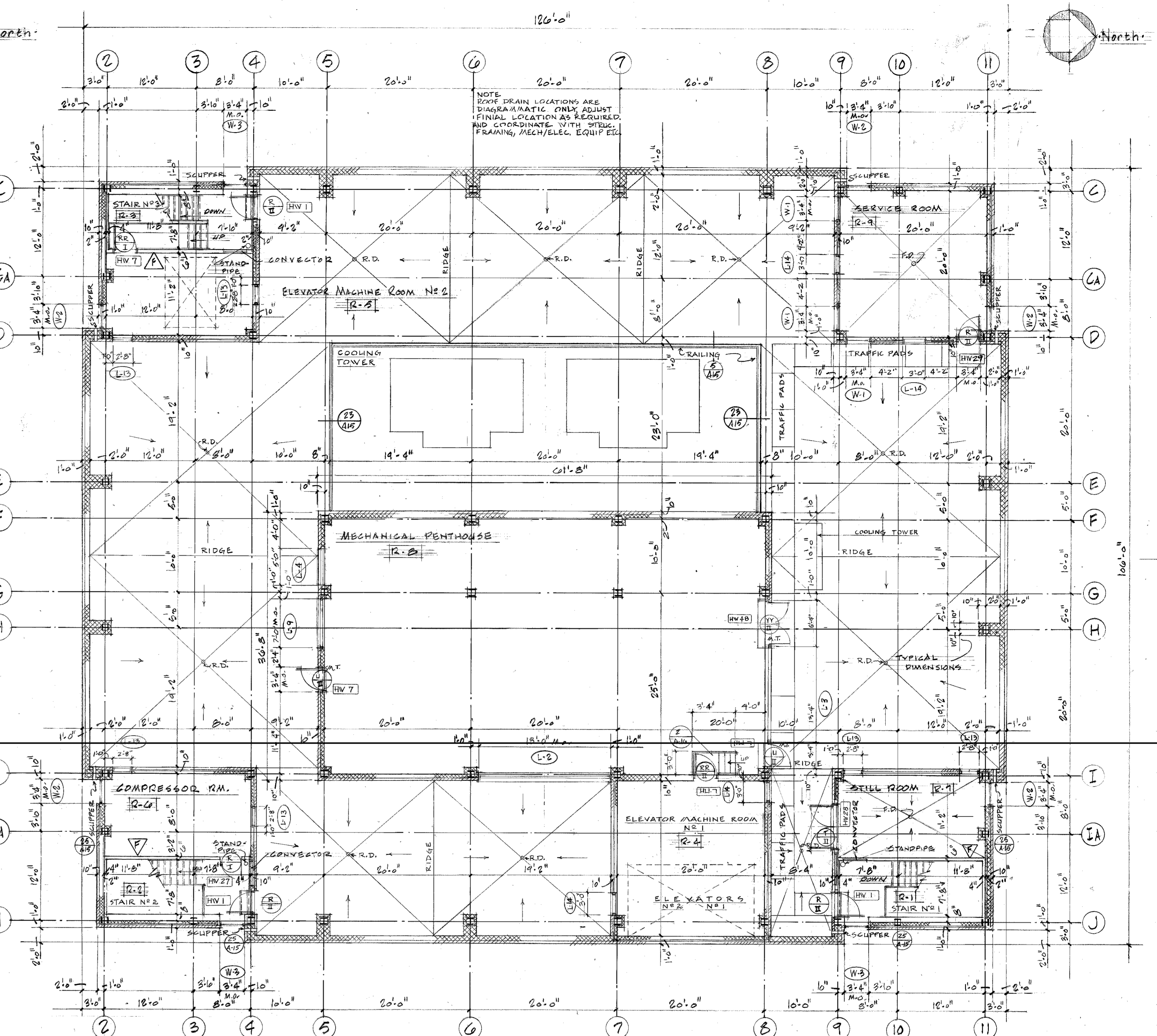
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CD A-2
 PROJECT NO. UB-713
 DATE: 2-28-80

PLAN - SECOND FLOOR
 Scale 1/8" = 1'-0"



SEVENTH FLOOR PLAN

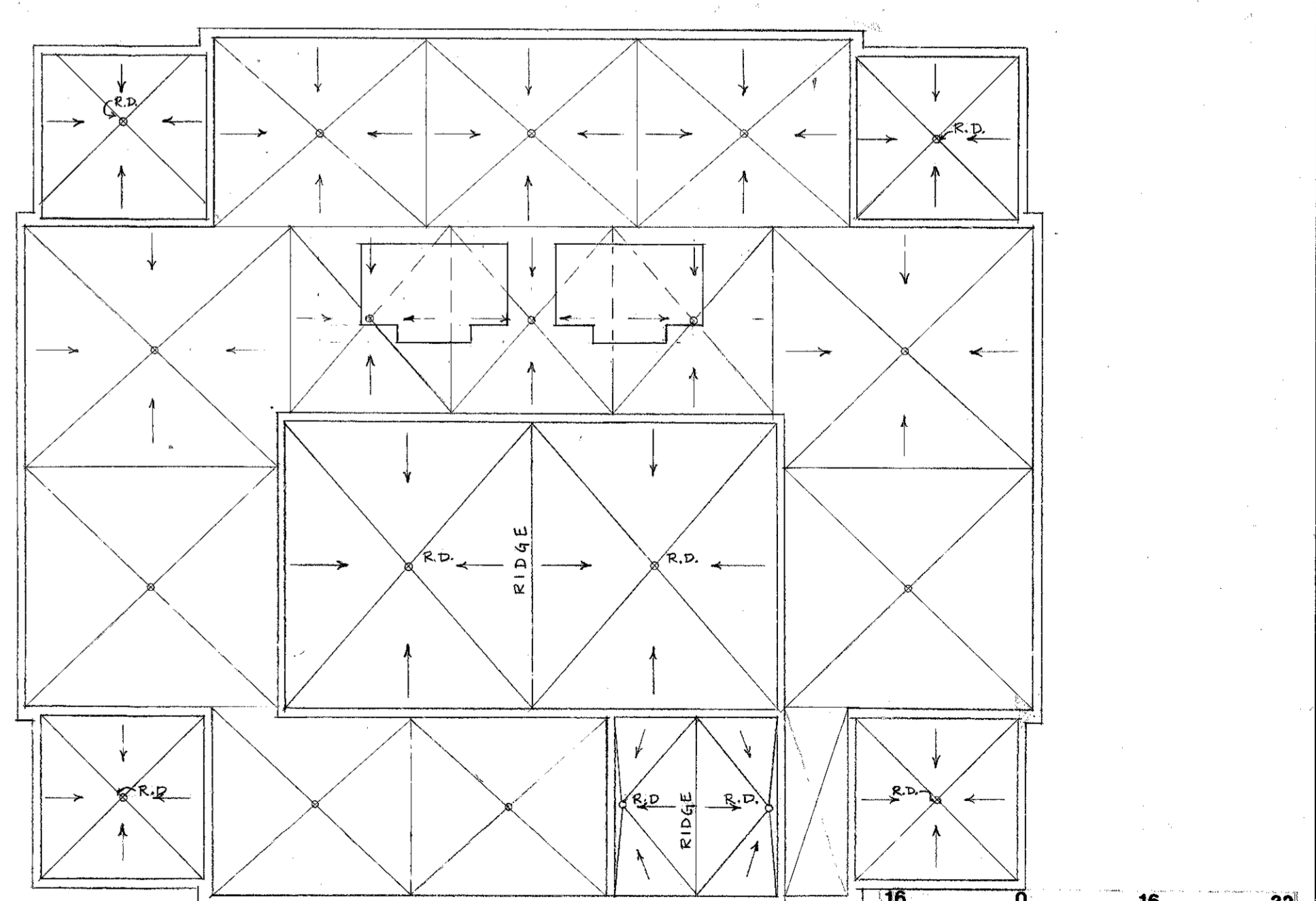


PENTHOUSE FLOOR PLAN

ROOM NO.	SPACE DESIGNATION	FLOOR	BASE	WALLS	CEILING	CLG. HGT.	REMARKS
701	WEST CORRIDOR	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
702	NORTH CORRIDOR	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
703	EAST CORRIDOR	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
704	SOUTH CORRIDOR	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
705	STAIR NO. 1	Hardened Concrete	Ptd. Stl. stringer	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
706	STAIR NO. 2	Hardened Concrete	Ptd. Stl. stringer	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
707	STAIR NO. 3	Hardened Concrete	Ptd. Stl. stringer	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
708	DEAN'S SUITE	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
709	OFFICE (w/door cl.)	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
710	T.R.	Ceramic Tile	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
711	DEAN'S SECRETARY	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
712	ASSOCIATE DEAN NO. 1	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
713	ASSOCIATE DEAN NO. 2	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
714	ADMIN. ASSISTANT	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
715	SECRETARIAL POOL	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
716	MATERIALS	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
717	CONFERENCE	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
718	LOUNGE	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
719	PPAS FAC. OFF. NO. 5	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
720	PPAS FAC. OFF. NO. 6	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
721	PPAS FAC. OFF. NO. 7	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
722	PPAS FAC. OFF. NO. 8	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
723	PPAS FAC. OFF. NO. 9	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
724	PPAS FAC. OFF. NO. 10	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
725	PPAS FAC. OFF. NO. 11	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
726	PPAS FAC. OFF. NO. 12	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
727	PPAS FAC. OFF. NO. 13	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
728	PPAS FAC. OFF. NO. 14	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
729	PPAS FAC. OFF. NO. 15	Carpet	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
730	SUPPLIES	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	

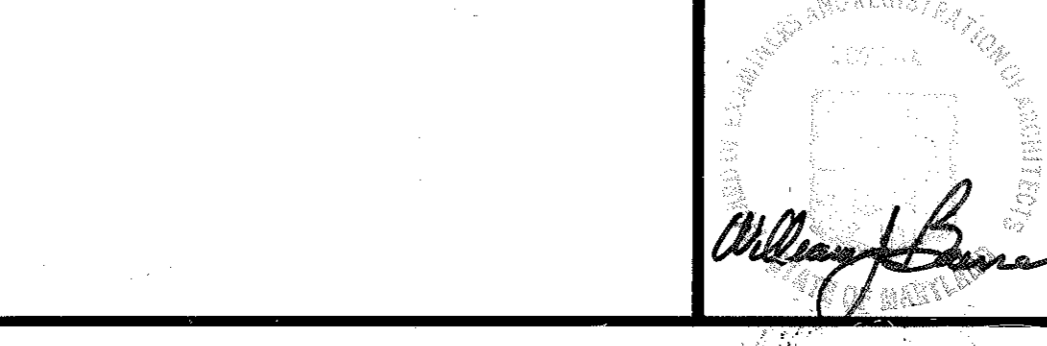
ROOM NO.	SPACE DESIGNATION	FLOOR	BASE	WALLS	CEILING	CLG. HGT.	REMARKS
731	RESEARCH OFFICES	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
732	PPAS SEMINAR	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
733	PPAS LAB. NO. 1	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
734	PPAS LAB. NO. 2	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
735	PPAS LAB. NO. 3	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
736	SUPPLIES	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
737	WOMEN	Ceramic Tile	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
738	MEN	Ceramic Tile	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
739	JANITOR	Hardened Concrete	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
740	ELECTRICAL CL.	Hardened Concrete	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
741	DUPLICATING	V.A.T.	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
742	MECHANICAL ROOM	Steel Grating	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
743	MECHANICAL ROOM	Steel Grating	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	
744	COOLING TOWER	Roofing	8" vinyl cove	Drywall Ptd. (alkyd enamel)	Acoust. Tile Type-1	8'-0"	

ROOM NO.	SPACE DESIGNATION	FLOOR	BASE	WALLS	CEILING	CLG. HGT.	REMARKS
R-1	STAIR NO. 1	Hardened Concrete	Ptd. Stl. stringer	Drywall Ptd. (alkyd enamel)	Cement Plaster	See Sect.	Cast alum. abra. nos. 5.
R-2	STAIR NO. 2	Hardened Concrete	Ptd. Stl. stringer	Drywall Ptd. (alkyd enamel)	Cement Plaster	See Sect.	Cast alum. abra. nos. 5.
R-3	STAIR NO. 3	Hardened Concrete	Ptd. Stl. stringer	Drywall Ptd. (alkyd enamel)	Cement Plaster	See Sect.	Cast alum. abra. nos. 5.
R-4	ELEVATOR MACH. RM. #1	Hardened Concrete	CHU Unpd.	CHU Unpd.	Exposed Struct. Unpd.	See Sect.	Cast alum. abra. nos. 5.
R-5	ELEVATOR MACH. RM. #2	Hardened Concrete	CHU Unpd.	CHU Unpd.	Exposed Struct. Unpd.	See Sect.	Cast alum. abra. nos. 5.
R-6	COMPRESSOR ROOM	Hardened Concrete	CHU Unpd.	CHU Unpd.	Exposed Struct. Unpd.	See Sect.	Cast alum. abra. nos. 5.
R-7	STILL ROOM	Hardened Concrete	CHU Unpd.	CHU Unpd.	Exposed Struct. Unpd.	See Sect.	Cast alum. abra. nos. 5.
R-8	MECHANICAL PENTHOUSE	Hardened Concrete	CHU Unpd.	CHU Unpd.	Exposed Struct. Unpd.	See Sect.	Cast alum. abra. nos. 5.
R-9	MECHANICAL ROOM	Hardened Concrete	CHU Unpd.	CHU Unpd.	Exposed Struct. Unpd.	See Sect.	Cast alum. abra. nos. 5.
R-10	ROOF PARAPET	Hardened Concrete	CHU Unpd.	CHU Unpd.	Exposed Struct. Unpd.	See Sect.	Cast alum. abra. nos. 5.



PLAN - SEVENTH FLOOR PENTHOUSE & ROOF

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



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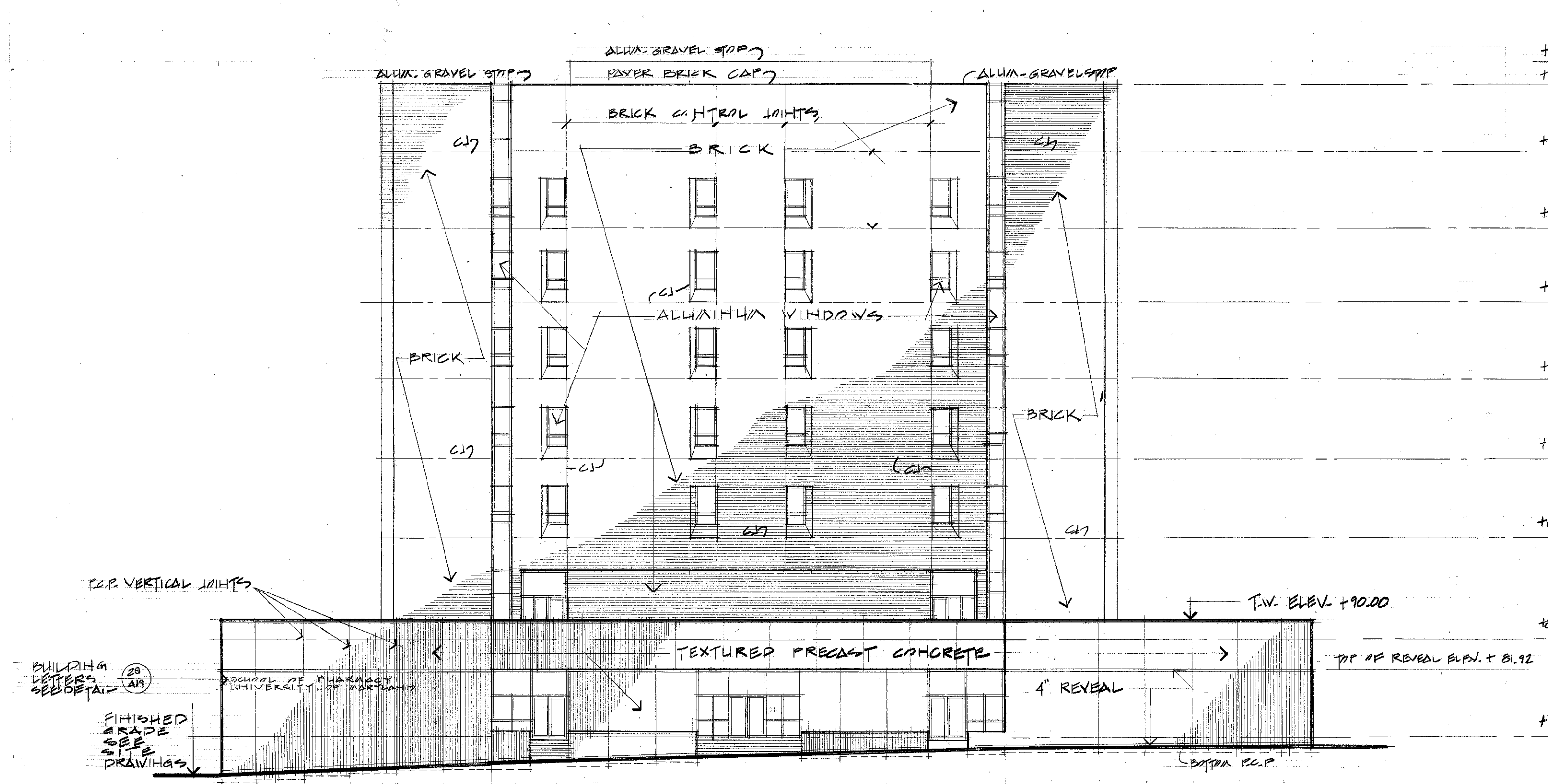
Stephen J. Marshall
 Director

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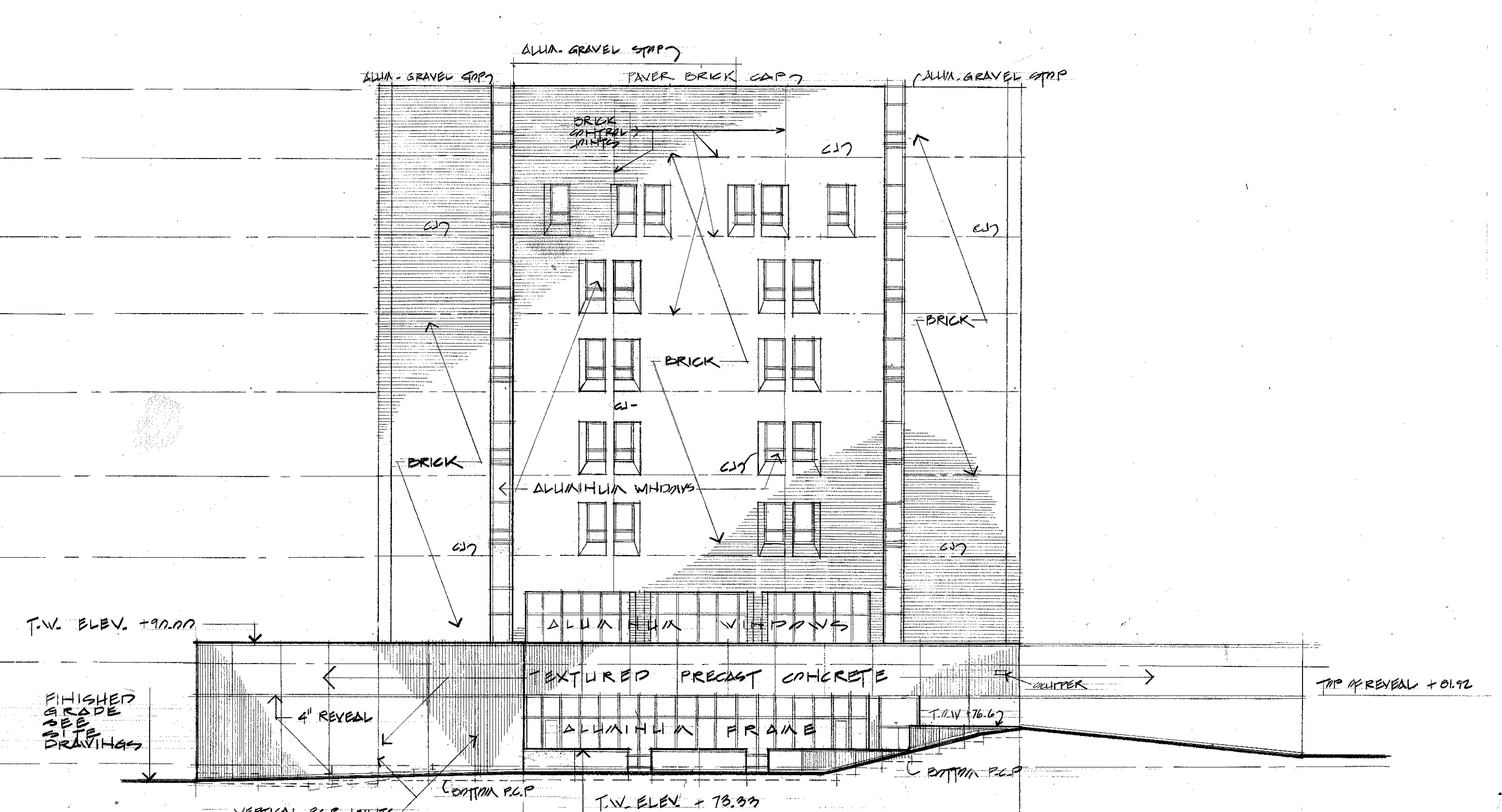
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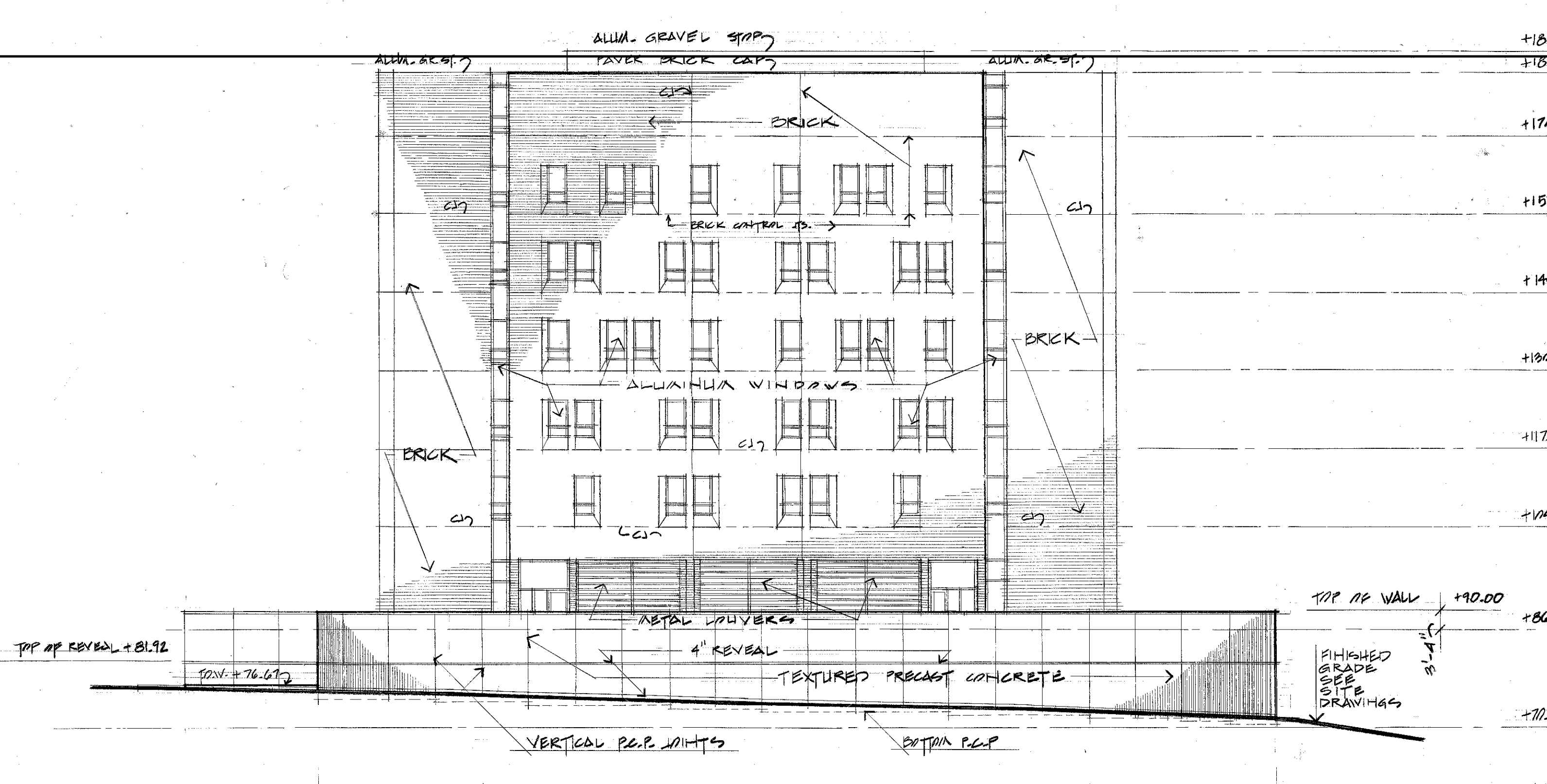
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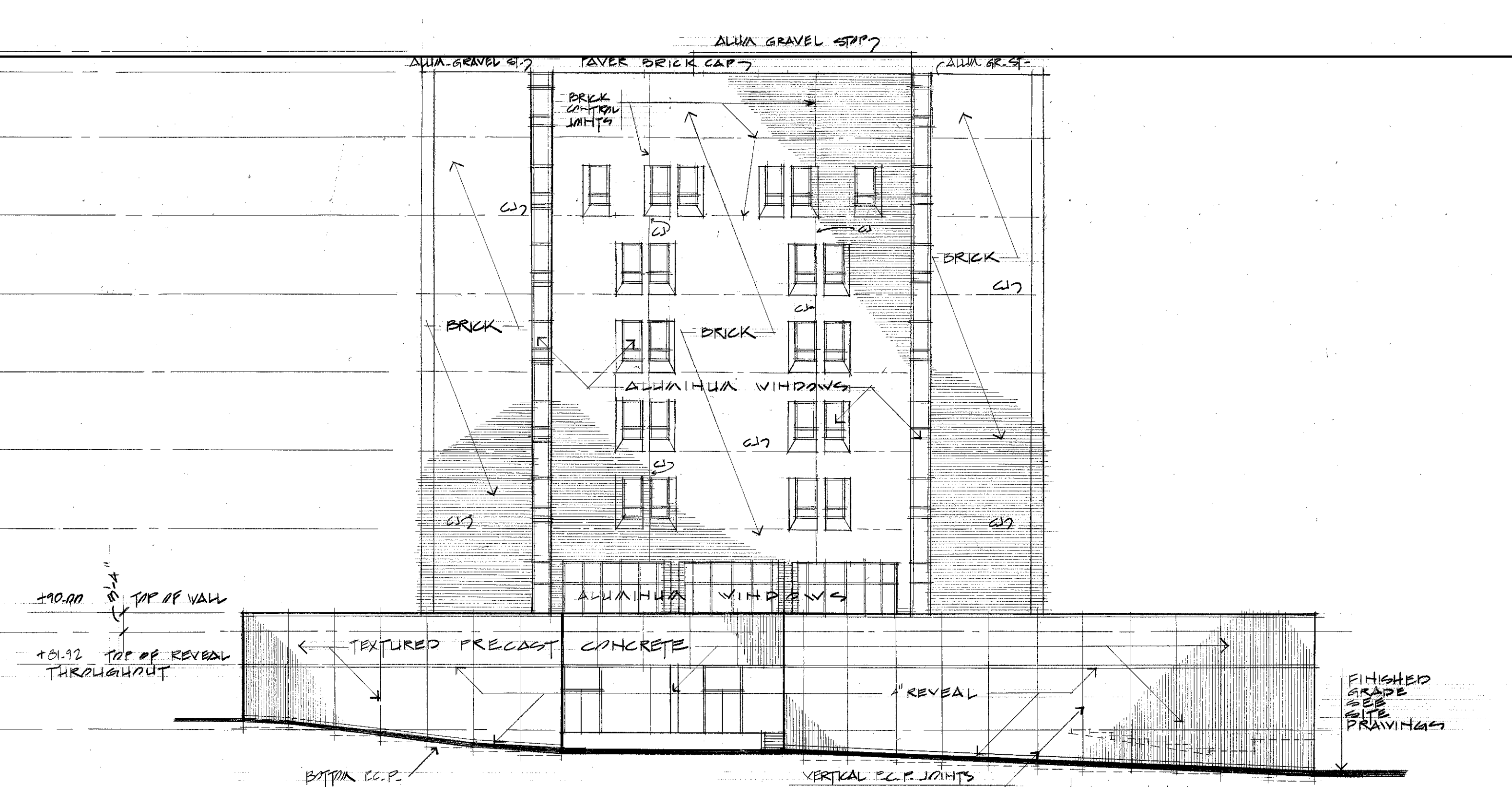
1 EAST ELEVATION
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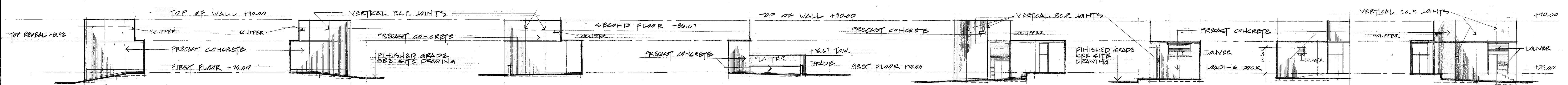
2 NORTH ELEVATION
SCALE 1/16" = 1'-0"



3 WEST ELEVATION
SCALE 1/16" = 1'-0"

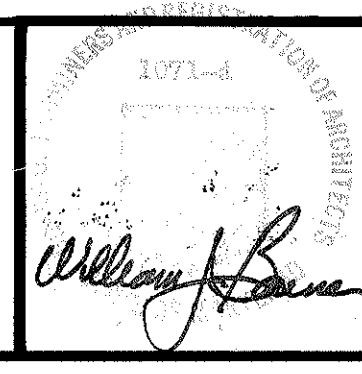


4 SOUTH ELEVATION
SCALE 1/16" = 1'-0"



5 MAIN ENTRANCE COURT
6 STUDENT LOUNGE COURTYARD
7 LOADING DOCK

EXTERIOR ELEVATIONS



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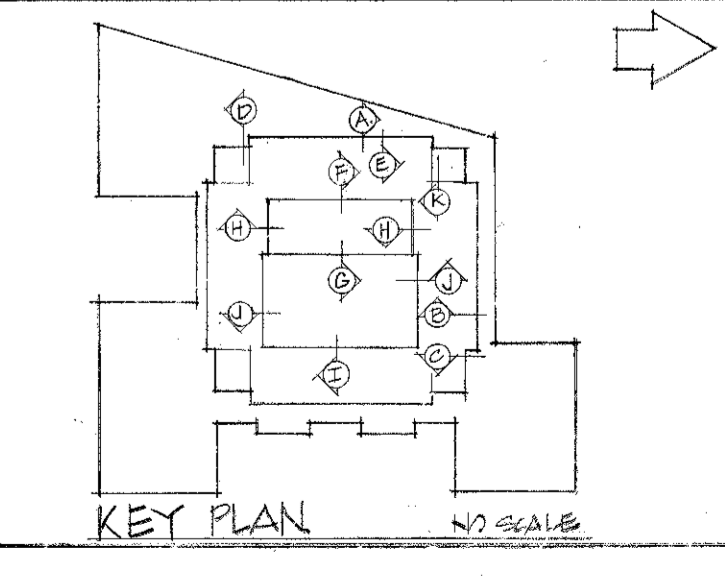
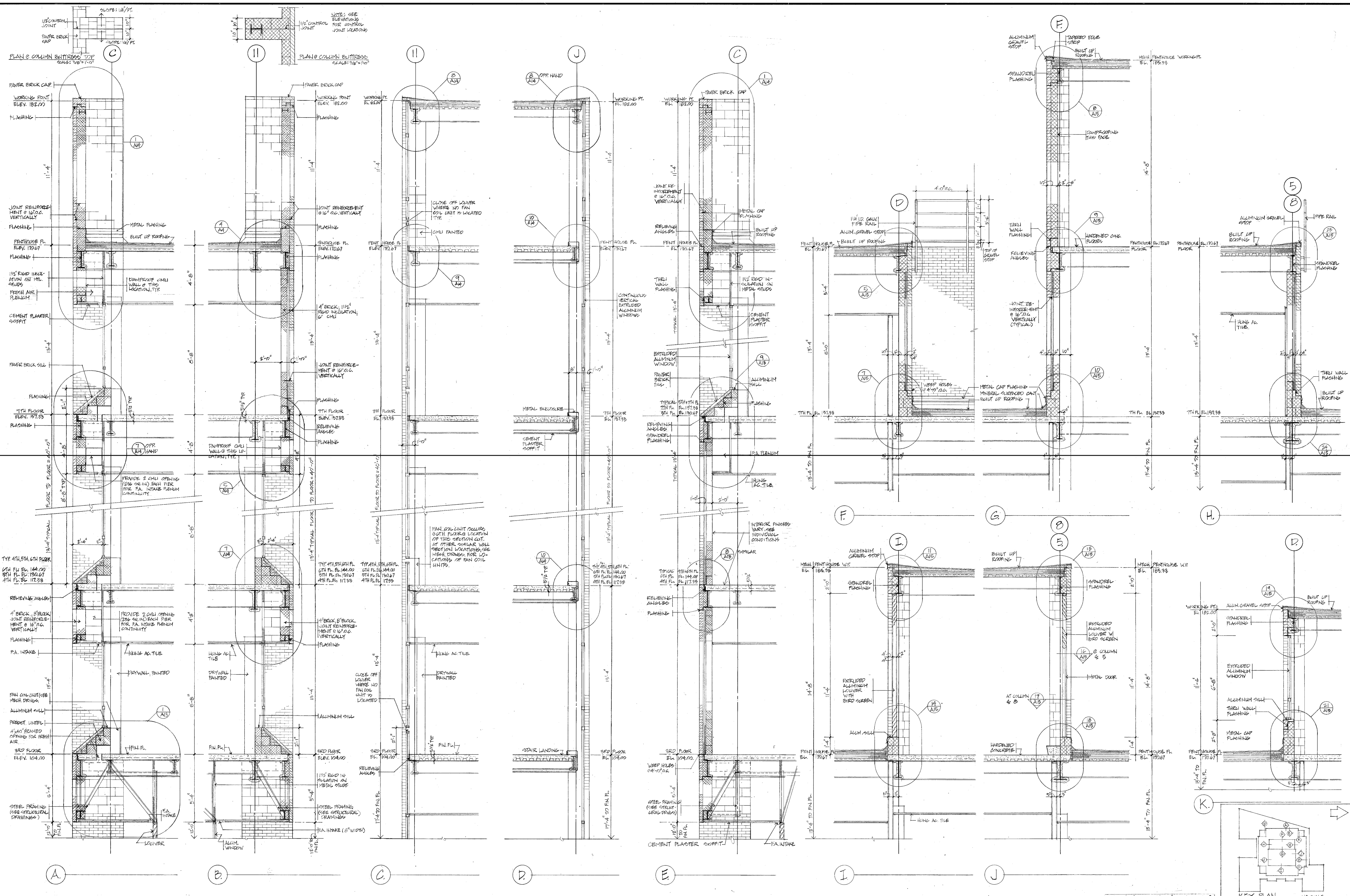
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Chancellor
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APPROVED
M. J. ...
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SECTIONS-THIRD THRU SEVENTH FLOORS

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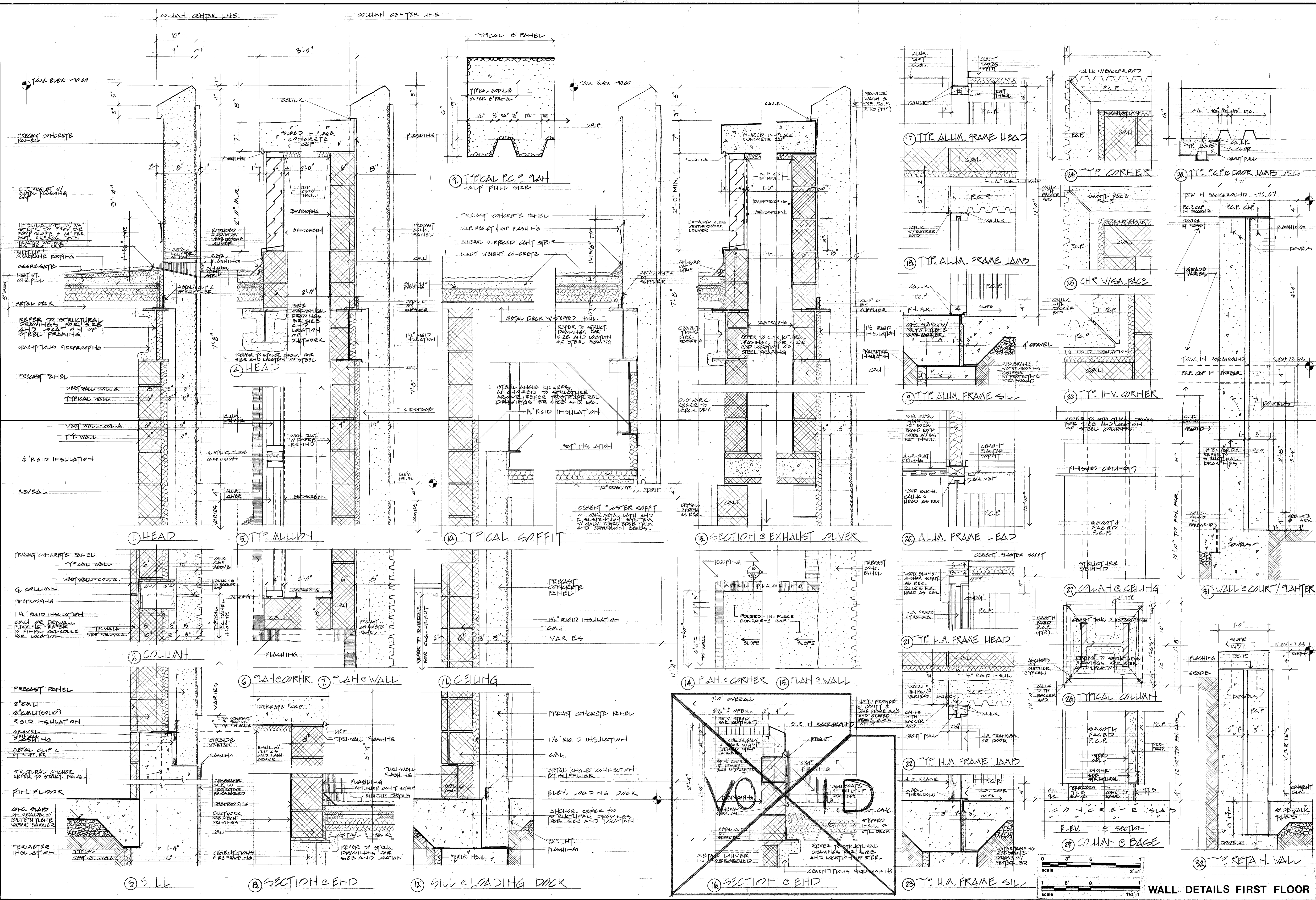
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Joseph M. Marshall
 M. S. P. S.

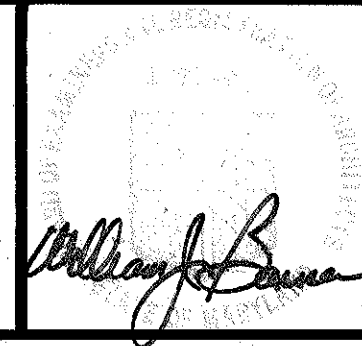
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WALL DETAILS FIRST FLOOR


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 STRUCTURAL ENGINEERS
 CIVIL ENGINEERS

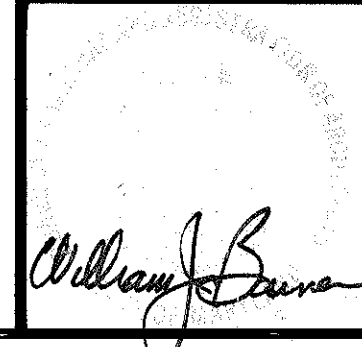
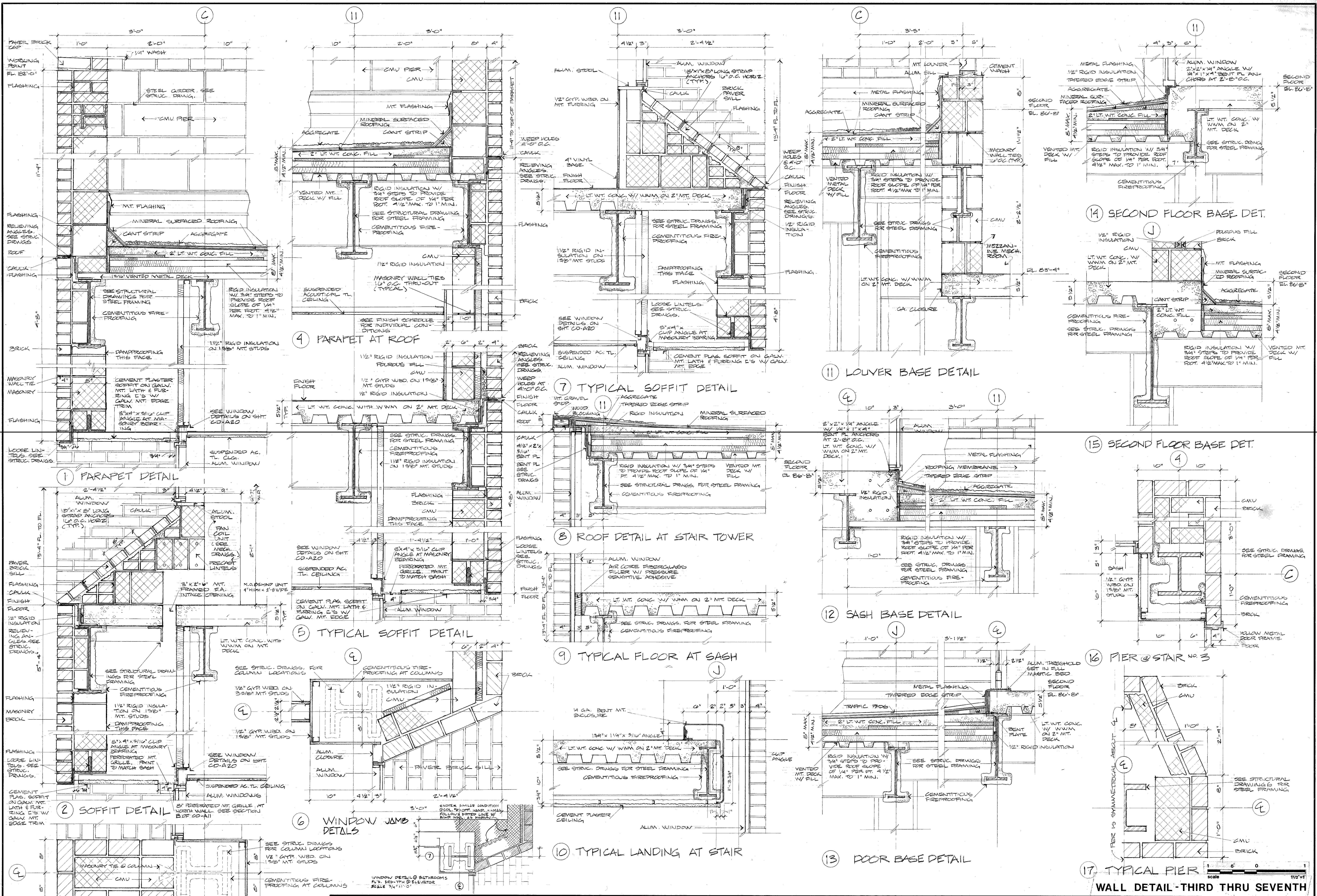

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 David Lawson Gregory

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 DAVID LAWSON GREGORY & ASSOCIATES

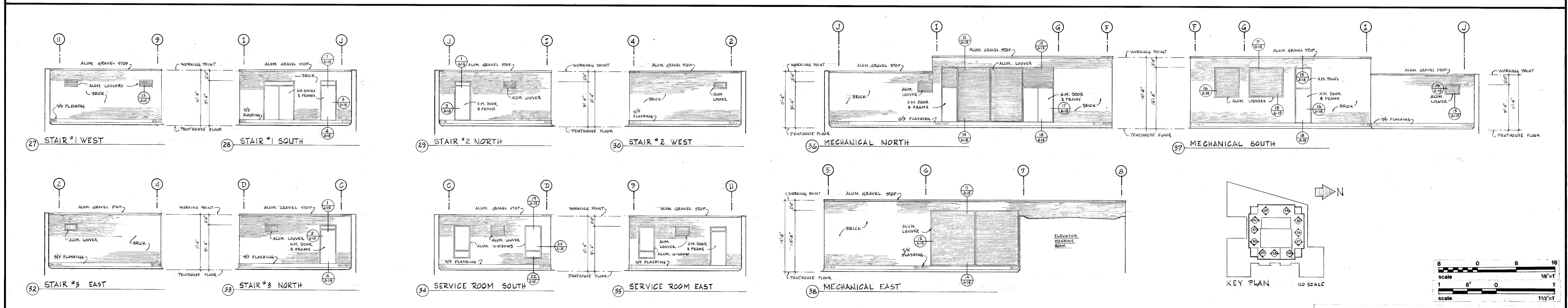
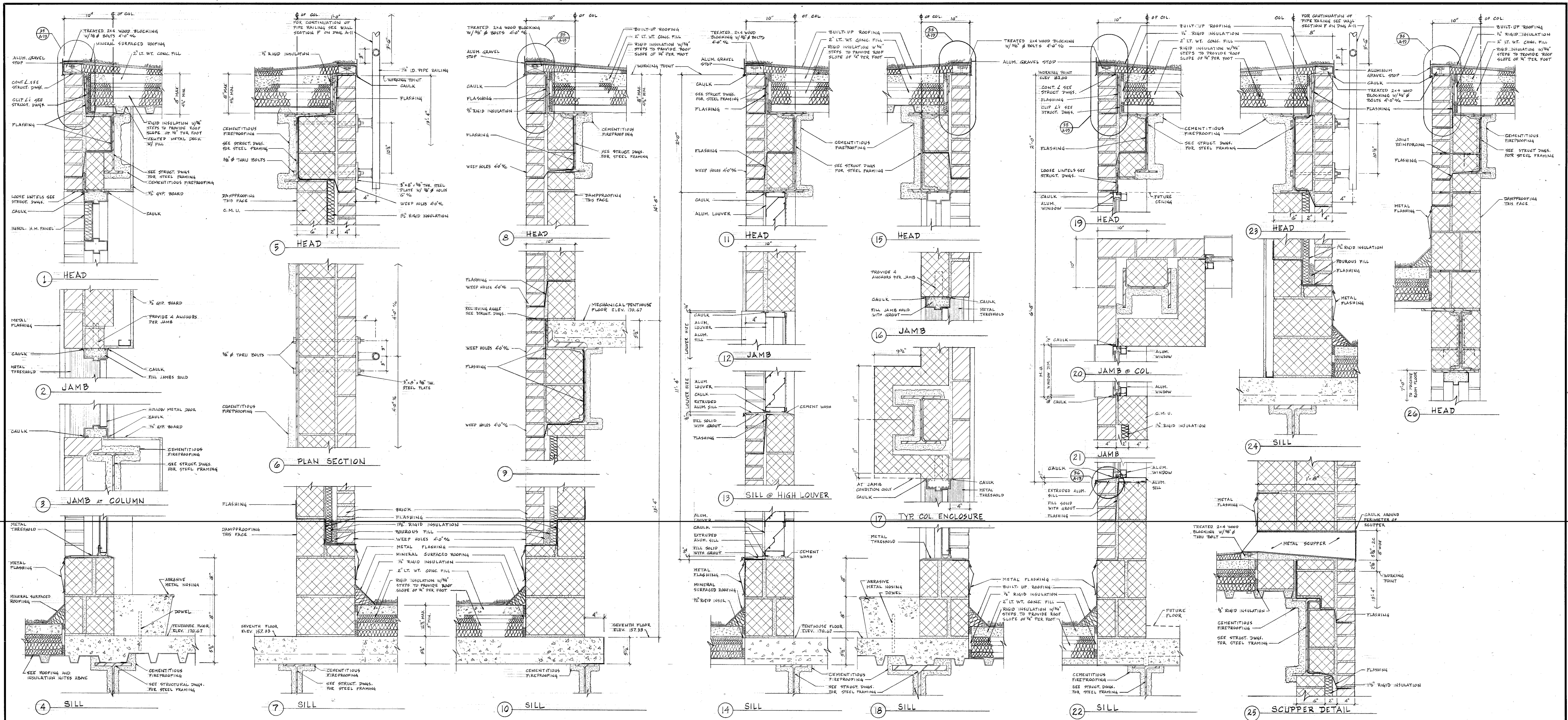
MECHANICAL-ELECTRICAL ENGINEERS
 STRUCTURAL ENGINEERS
 CIVIL ENGINEERS

A. Okun
 CHANCELLOR
 UNIVERSITY OF MARYLAND
 AT BALTIMORE

J. G. ...
 MARSHALL McCARD

REVISIONS
12-1-82 RECORD DRAWINGS

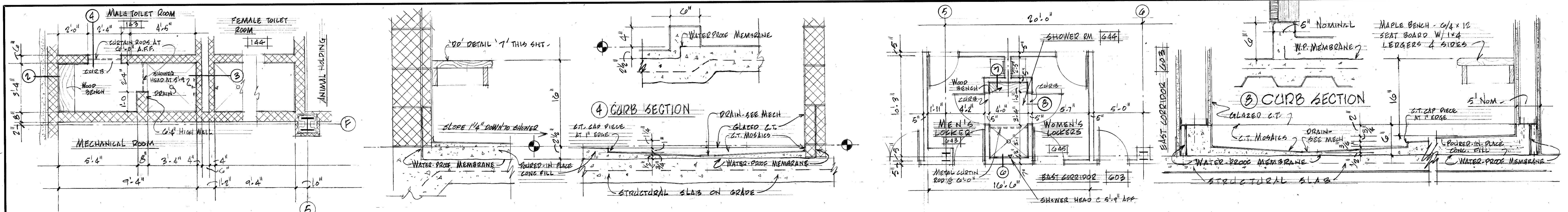
SCHOOL OF PHARMACY		CD
UNIVERSITY OF MARYLAND		A-14
BALTIMORE		PROJECT NO. UB-713
DATE: 2-28-80		SCALE 1/2"=1'



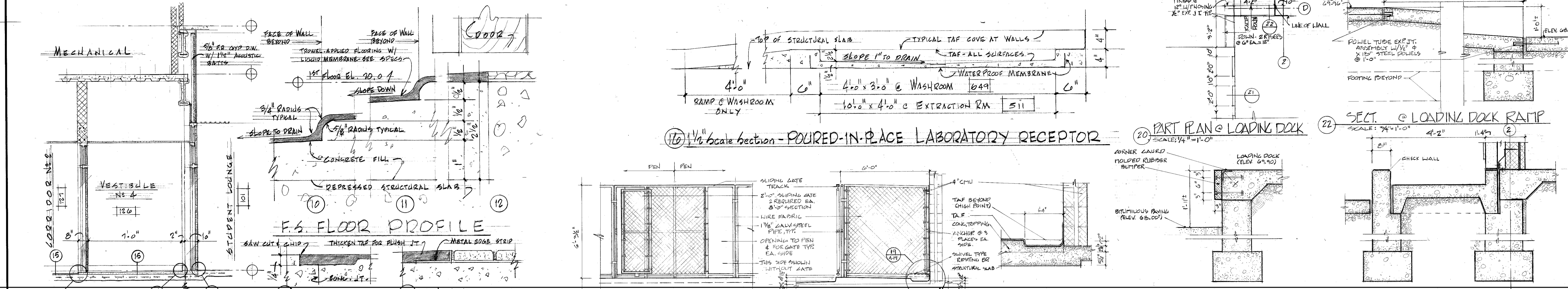
ELEVATIONS OF PENTHOUSES
 NOTE: FACING FOR EXTERIOR OF ALL WALLS WITHIN PERIMETER OF ROOF PARAPET WALL SHALL BE COMMON BRICK EXCEPT INSIDE FACE OF PARAPET SHALL BE G.M.L.

WALL DETAILS - PENTHOUSE & ROOF EXTERIOR ELEVATIONS PENTHOUSES

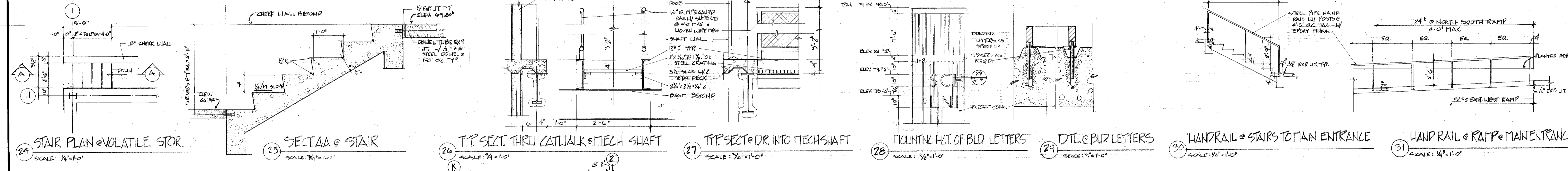
<p>NES, CAMPBELL & PARTNERS / MILLER, SCHUERHOLZ & ASSOCIATES, INC. ARCHITECTS LAMPRECHT CONSULTANTS DAVID LAWSON GREGORY & ASSOCIATES</p>	<p>MECHANICAL-ELECTRICAL ENGINEERS STRUCTURAL ENGINEERS CIVIL ENGINEERS</p>	<p><i>A. Okuhn</i> CHANCELLOR UNIVERSITY OF MARYLAND AT BALTIMORE</p>	<p><i>J. Giblin</i> <i>Manuel Melod</i> 7/1/82</p>	<p>REVISIONS 12-1-82 RECORD DRAWINGS</p>	<p>SCHOOL OF PHARMACY UNIVERSITY OF MARYLAND BALTIMORE</p>	<p>CD A-15 PROJECT NO. UB-713 DATE: 2-28-80</p>
				<p>SCALE: 1/8" = 1'-0"</p>		



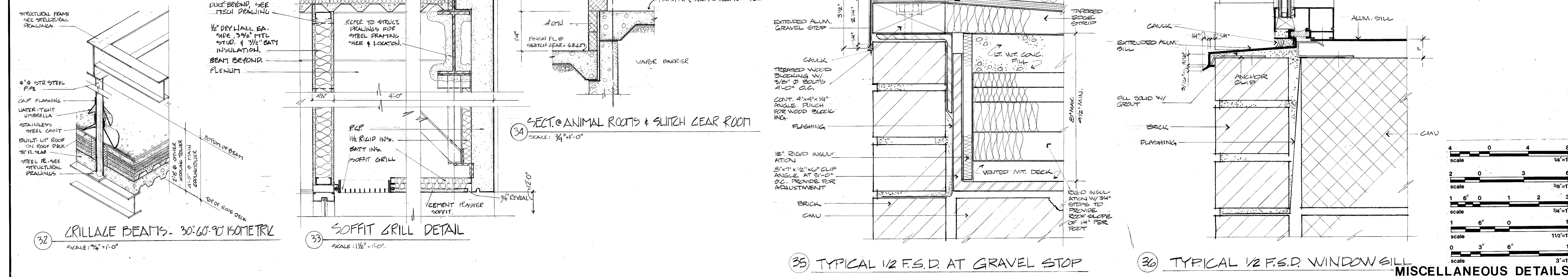
① 3/8" SCALE 1ST FLOOR SHOWER ROOM PLAN
 ② 1/2" SCALE BENCH SECTION
 ③ 1/2" SCALE SHOWER RECEPTOR SECTION
 ④ 1/4" SCALE LOCKER ROOMS PLAN - 6TH FLOOR
 ⑤ 1/2" SCALE SHOWER RECEPTOR SECTION
 ⑥ 1/2" SCALE BENCH SECTION



⑧ 3/8" SCALE SECTION - VESTIBULE NO. 4
 ⑨ 1/2" SCALE SECTION - TROWEL-APPLIED FLOORING TERMINATIONS
 ⑩ 1/2" SCALE SECTION - F.S. FLOOR PROFILE
 ⑪ 1/2" SCALE SECTION - FRONT ELEV. OF DOOR PEN
 ⑫ 1/2" SCALE SECTION - TYP. SECTION THROUGH DOOR PEN
 ⑬ 1/2" SCALE SECTION - TYP. SECTION THROUGH THROUGH DOOR PEN
 ⑭ 1/2" SCALE SECTION - TYP. SECTION @ LOADING DOCK
 ⑮ 1/2" SCALE SECTION - TYP. SECTION @ LOADING DOCK RAMP



⑰ 3/8" SCALE SECTION - STAIR PLAN @ VOLATILE STOR.
 ⑱ 3/4" SCALE SECTION - SECTION AA @ STAIR
 ⑲ 3/4" SCALE SECTION - TYP. SECTION THRU CATWALK @ MECH SHAFT
 ⑳ 3/4" SCALE SECTION - TYP. SECTION @ DR. INTO MECH SHAFT
 ㉑ 3/8" SCALE SECTION - MOUNTING H.T. OF BLD LETTERS
 ㉒ 3/8" SCALE SECTION - DTL. @ BLD LETTERS
 ㉓ 1/4" SCALE SECTION - HANDRAIL @ STAIRS TO MAIN ENTRANCE
 ㉔ 1/4" SCALE SECTION - HANDRAIL @ RAMP @ MAIN ENTRANCE



⑳ 1/2" SCALE SECTION - CRILLAGE BEAMS - 30'-60'-90' ISOMETRY
 ㉕ 1/2" SCALE SECTION - SOFFIT GRILL DETAIL
 ㉖ 3/4" SCALE SECTION - SECTION @ ANIMAL ROOTS & SWITCH GEAR ROOT
 ㉗ 3/8" SCALE SECTION - TYPICAL 1/2 F.S.D. AT GRAVEL STOP
 ㉘ 3/8" SCALE SECTION - TYPICAL 1/2 F.S.D. WINDOW SILL

MISCELLANEOUS DETAILS

	NES, CAMPBELL & PARTNERS / MILLER, SCHUERHOLZ & ASSOCIATES, INC. ARCHITECTS LAMPRECHT CONSULTANTS DAVID LAWSON GREGORY & ASSOCIATES	MECHANICAL-ELECTRICAL ENGINEERS STRUCTURAL ENGINEERS CIVIL ENGINEERS	 CHANCELLOR UNIVERSITY OF MARYLAND AT BALTIMORE	REVISIONS 12-1-82 RECORD DRAWINGS	SCHOOL OF PHARMACY UNIVERSITY OF MARYLAND BALTIMORE	CD A-19 PROJECT NO. UB-713 DATE: 2-28-80
	FILE NO. 19 - DWG. NO. 1743B(1)(08-73)4-7					

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

620002 7118
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@umaryland.edu

Analyst: K. Hegde

Date Analyzed: 7/12/19

Verifier: Y. Simms

Date Analyzed: 7/12/19

Lab Supervisor: [Signature]

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 Deek
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

A620003 4110

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 Lower Roof

Submitted By: Steven Deek

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				799
Tremolite					Other				
TEM Analysis Recommended (Y/N)					Layer 1				
Layered (Y/N)					Layer 2				
					Layer 3				

Comments: email report to sdeek@umaryland.edu

Analyst: K. Hegole

Date Analyzed: 7/12/19

Verifier: Y. Summers

Date Analyzed: 7/12/19

Lab Supervisor: James Lee

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

Test date: 11/1/2016 **Ambient temperature:** 55 °

Roof area: sq. ft **Tester mfg:** DMD Force Measurement Systems

Max. cap. of tester: 2,000 lbs **Select one:** lbf kN

Date of last calibration: 7/1/2016 **Number of pulls recorded on Form B:** 11

Fastener tested: FM-290 **Fastener manufacturer:** ES Products/Trufast

Fastener tested: #14 HD - 8" **Fastener manufacturer:** Trufast

Fastener tested: **Fastener manufacturer:**

Test performed by: Ty Shedleski

Witnessed by: Rick F. **Test cut areas repaired by:** 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"/> Cementitious 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

$lbf \times .00448222 = kN \times 224.8089431 = lbf$

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

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 μm 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

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.

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.



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

Phone: 301-831-1978
Toll-Free: 800-869-3720
Fax: 301-874-2295
E-mail: joe@infraredpsi.com
Website: www.InfraredPSI.com

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



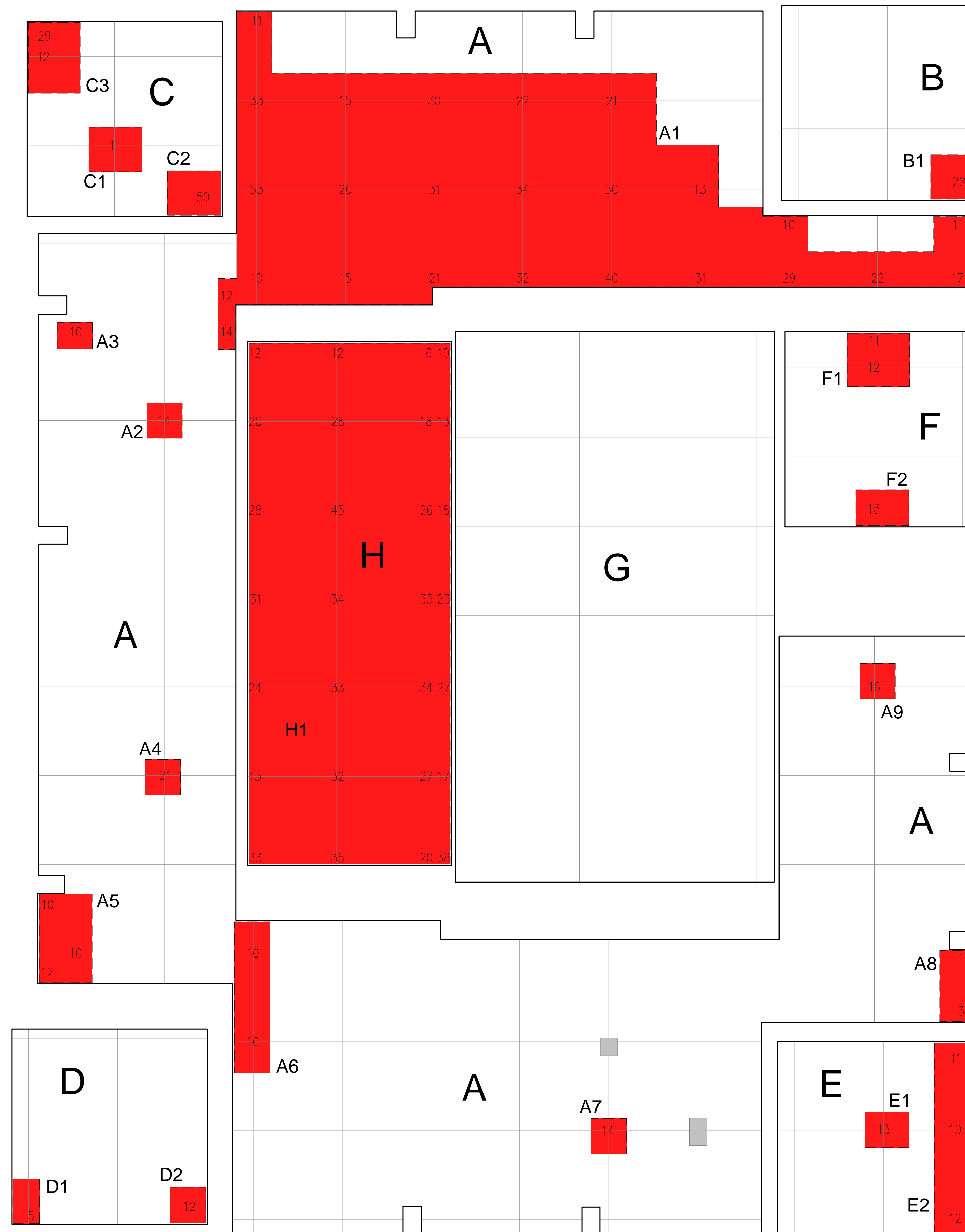
Pharmacy Roof F-Looking South



Pharmacy Roof G-LookingSouth



Pharmacy Roof H-Looking South



'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	-

UNIVERSITY OF MARYLAND-BALTIMORE

SCHOOL OF PHARMACY
20 N. PINE ST.
BALTIMORE, MD 21201

BUILDING ROOF - MOISTURE SCAN

	DRAWN: AJR DATE DRAWN: 09/25/19 REV: 0 SHEET NO. 776A
--	--

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 SCAN OVERVIEW



'I' TOTAL SUSPECTED WET SQ FT = 351

AREA	SIZE	SQ FT	NOTES
I1	5 x 3	15	-
I2	12 x 6	58	*SEE DRAWING
I3	4 x 4	16	-
I4	3 x 4	12	-
I5	18 x 13	138	*SEE DRAWING
I6	6 x 14	55	*SEE DRAWING
I7	3 x 4	12	-
I8	3 x 3	9	-
I9	4 x 9	36	-



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 

UNIVERSITY OF MARYLAND-BALTIMORE

SCHOOL OF PHARMACY
20 N. PINE ST.
BALTIMORE, MD 21201

BUILDING ROOF - MOISTURE SCAN

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