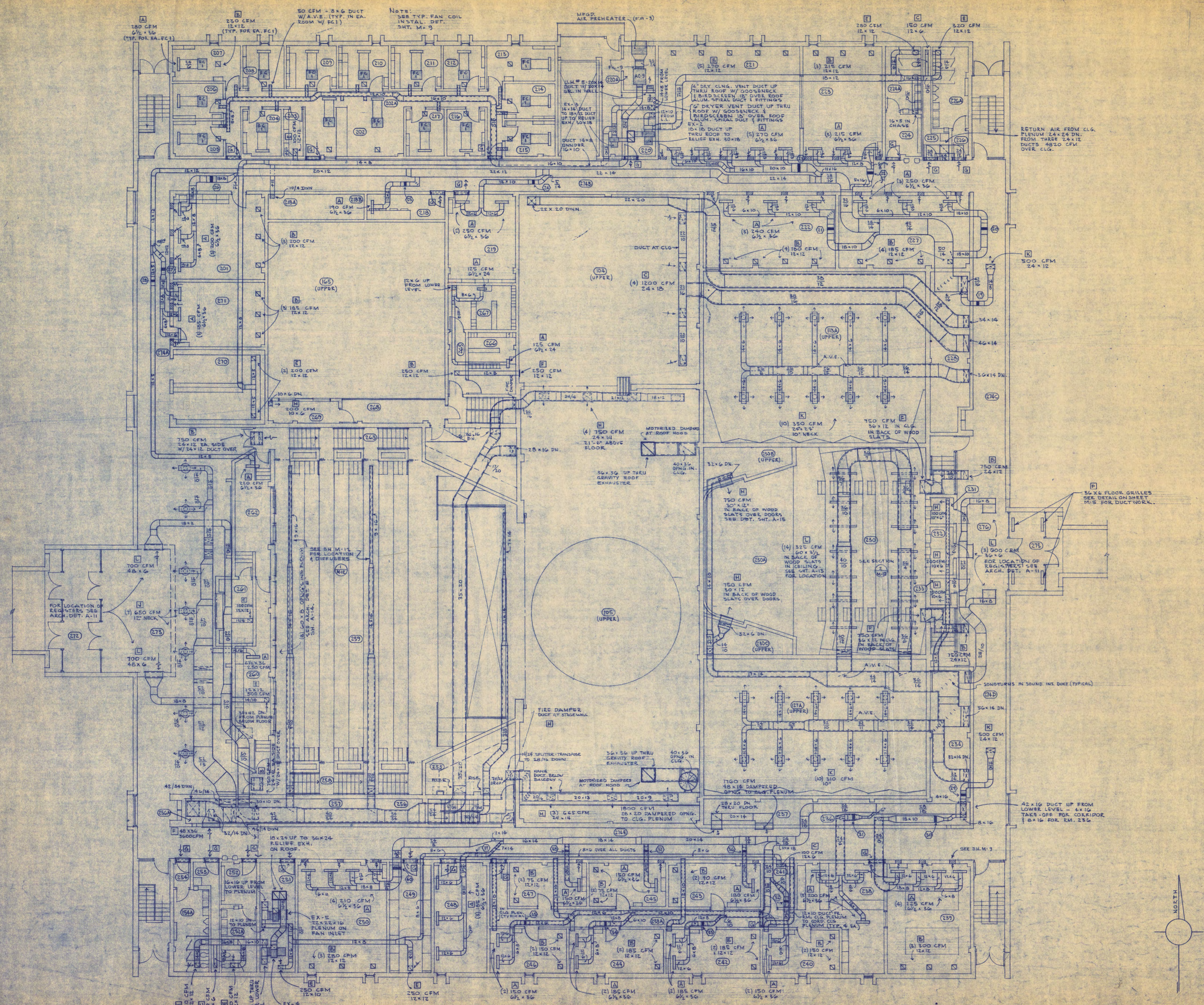


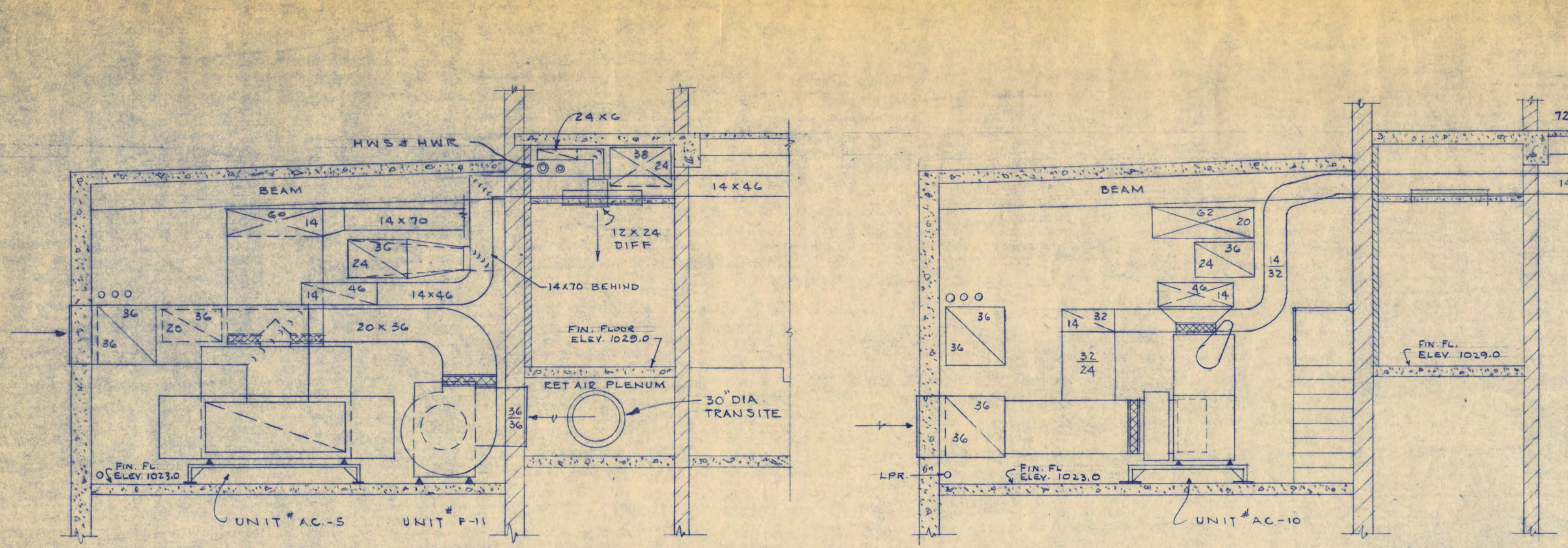
NOTES

- 1) SEE M-9 FOR SYMBOLS.
- 2) SEE M-12 FOR BLDG. SECTION & DETAILS.
- 3) LOCATE ROOM THERMOSTATS ABOVE LITE SWITCHES OR AS DIRECTED.
- 4) REFER TO SH. M-4 FOR ADDITIONAL NOTES.
- 5) COORDINATE ALL DUCT LOCATIONS WITH PIPING CONTRACTOR.



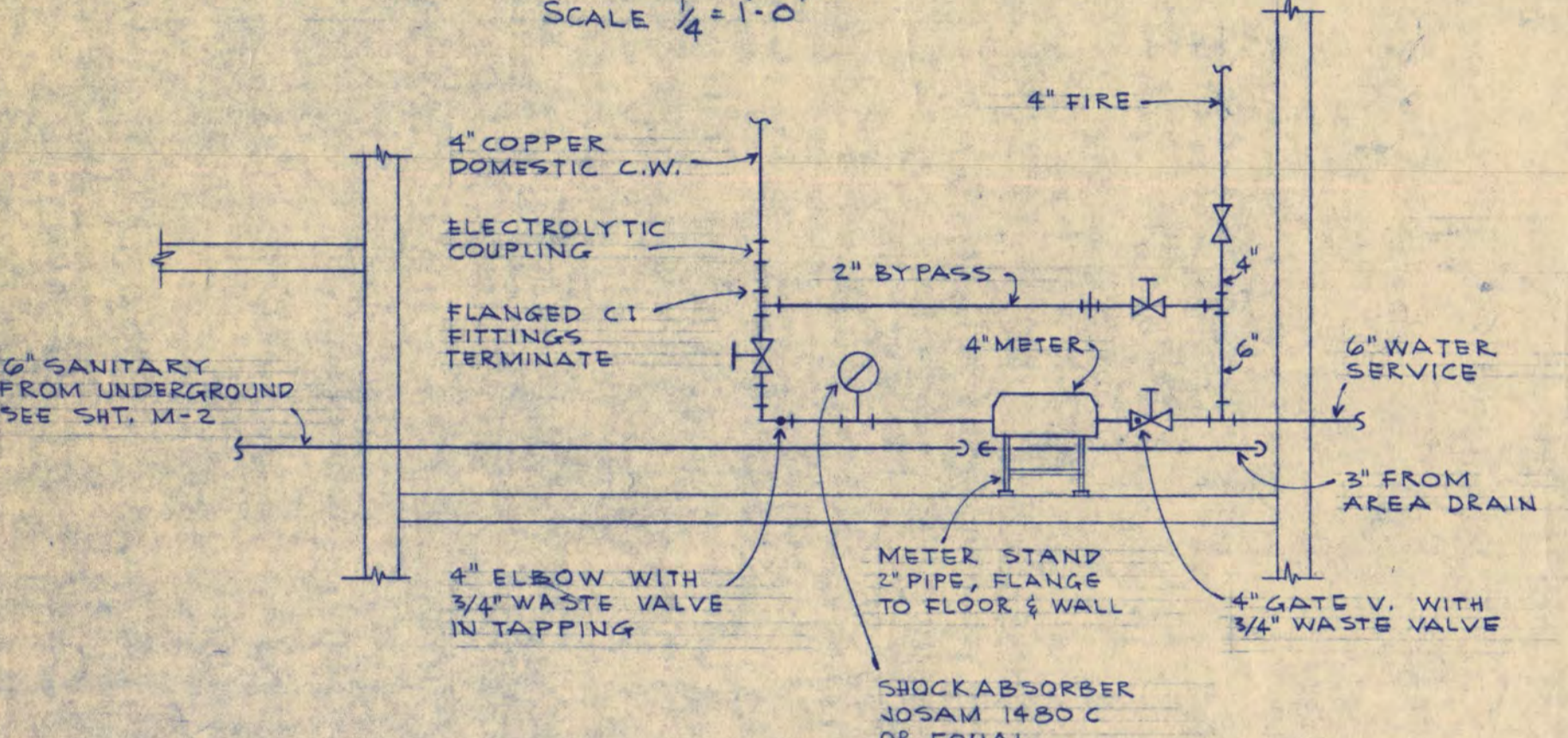
FIRST FLOOR PLAN  
1/8" = 1'-0"

<b>WALTER BUTLER COMPANY</b>	
<b>HAARSTICK LUNDGREN AND ASSOCIATES INC.</b>	
ARCHITECTS	ENGINEERS
ST. PAUL	MINN.
<b>FINE ARTS BUILDING</b>	
ST. CLOUD STATE COLLEGE ST. CLOUD, MINNESOTA	
DEPARTMENT OF ADMINISTRATION - STATE OF MINNESOTA A. J. NELSON	
STATE ARCHITECT	
STATE PROJECT NO. <b>3750</b>	APPROVED BY: PRESIDENT, ST. CLOUD STATE COLLEGE
COMMAND NO. <b>6401</b>	APPROVED BY: EXECUTIVE DIRECTOR, STATE COLLEGE BOARD
	APPROVED BY: COMMISSIONER OF ADMINISTRATION (AN AUTHORIZED SIGNATURE)
DATE 6/15/66	I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.
DRAWN BY H. B. D.M.	REG. NO.
CHECKED BY A.J.N.	SHEET NO. <b>M-6</b>
REVISED 5/16/66	MECHANICAL
	FIRST FLOOR VENTILATION



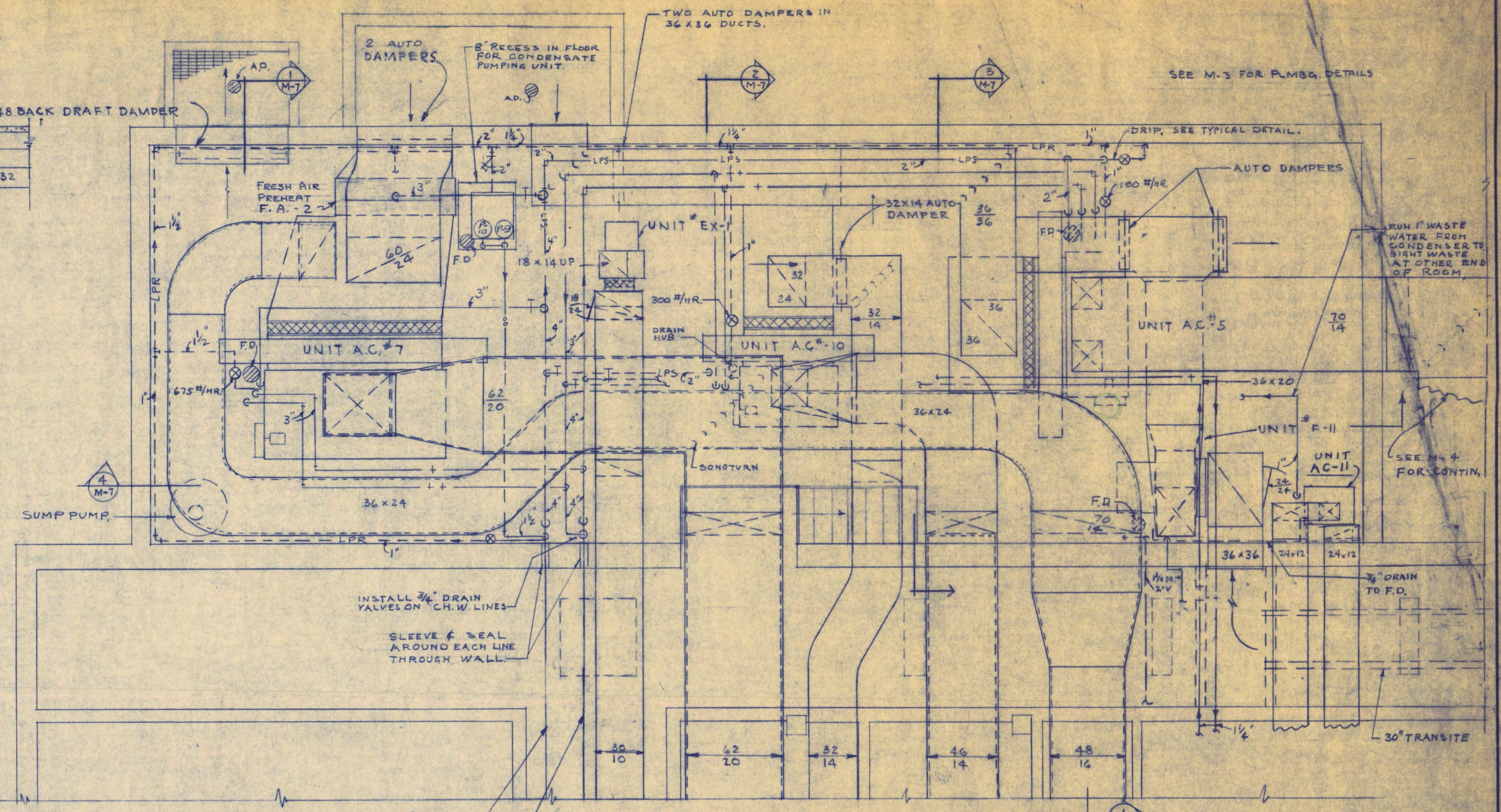
SECTION 1  
SCALE 1/4" = 1'-0"

SECTION 2  
SCALE 1/4" = 1'-0"



STRAPPING DETAIL  
(NO SCALE)  
6" WATER SERVICE ENTERING BUILDING

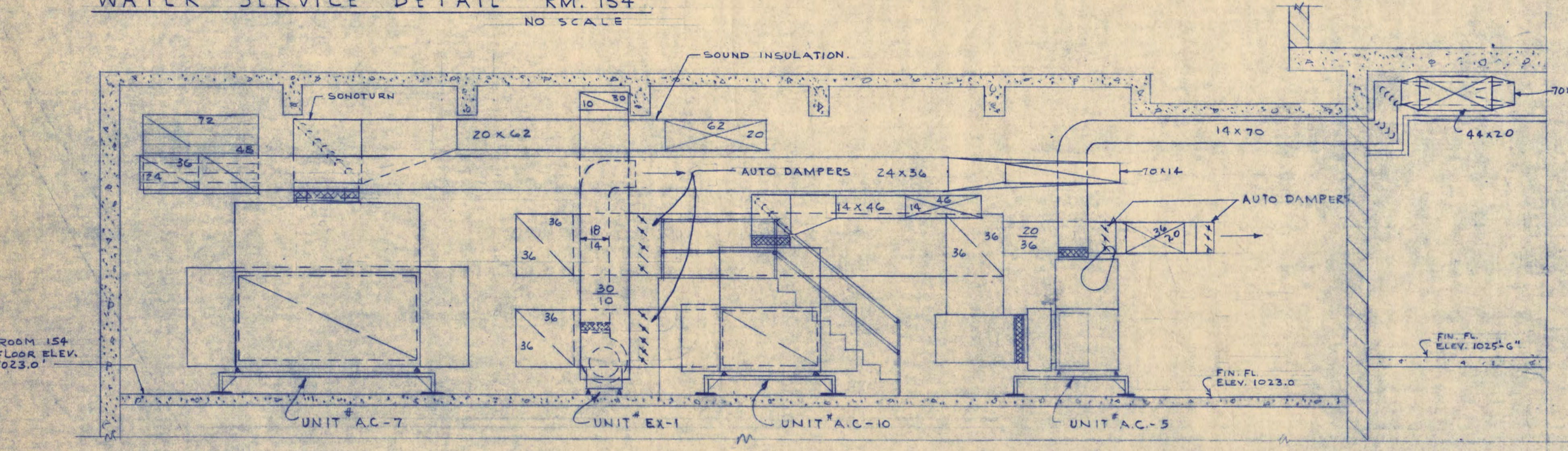
TYPICAL DRIP FOR LOW PRESSURE STEAM



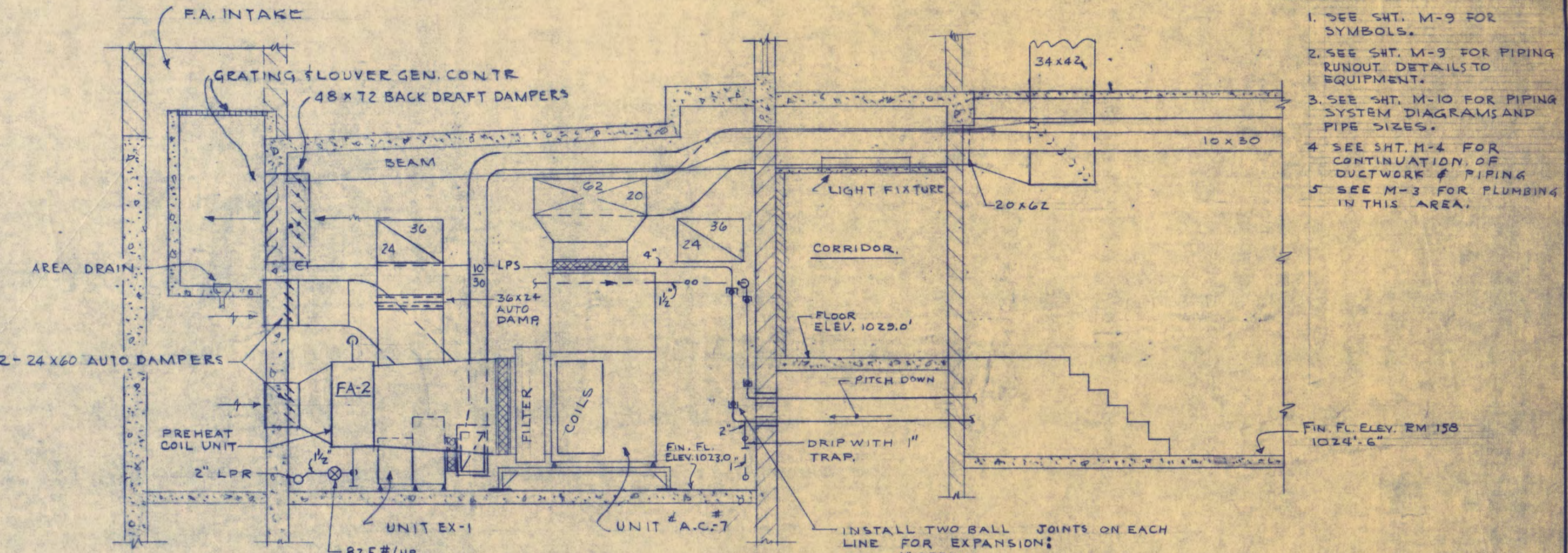
EQUIP ROOM PLAN - WEST (ROOM 150)  
SCALE 1/4" = 1'-0"  
FLOOR ELEV. 1023.0'

- NOTES:
- SEE SHT. M-9 FOR SYMBOLS.
  - SEE SHT. M-9 FOR PIPING RUNOUT DETAILS TO EQUIPMENT.
  - SEE SHT. M-10 FOR PIPING SYSTEM DIAGRAMS AND PIPE SIZES.
  - SEE SHT. M-4 FOR CONTINUATION OF DUCTWORK & PIPING.
  - SEE M-2 FOR PLUMBING IN THIS AREA.

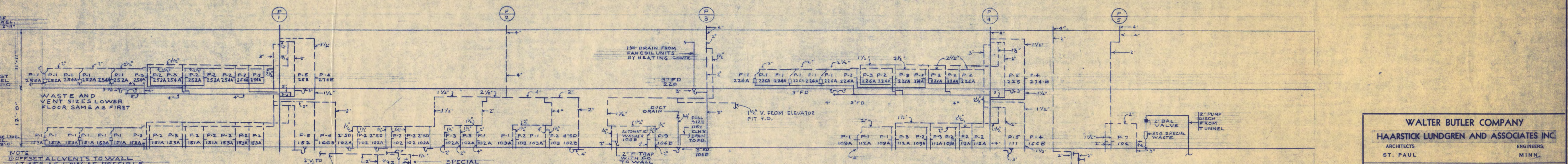
WATER SERVICE DETAIL RM. 154  
NO SCALE



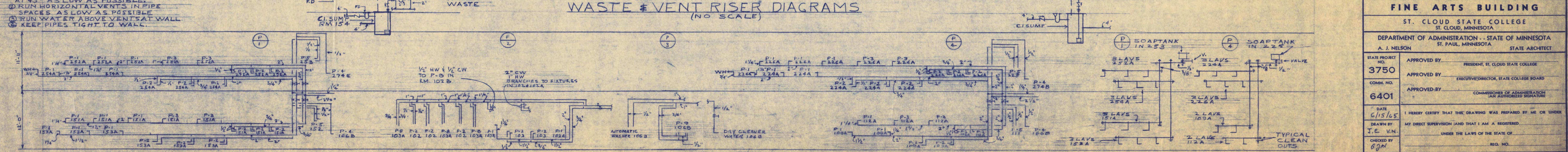
SECTION 3  
SCALE 1/4" = 1'-0"



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



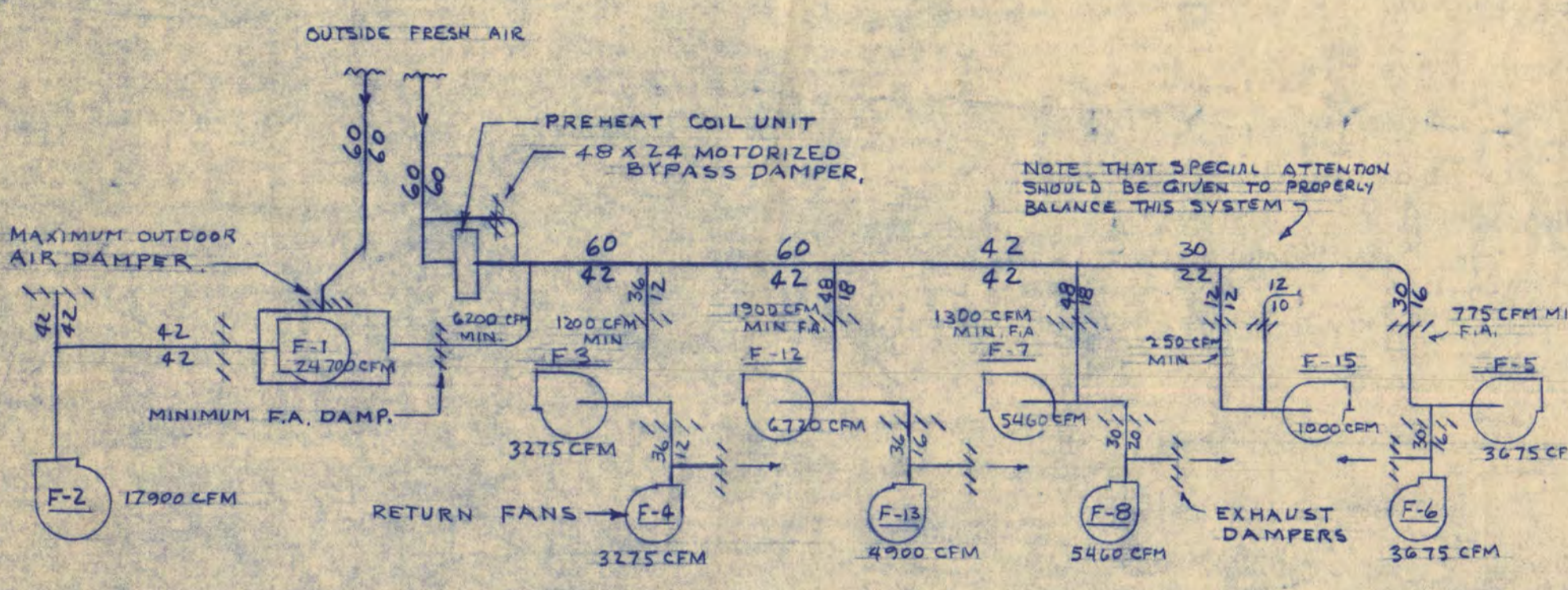
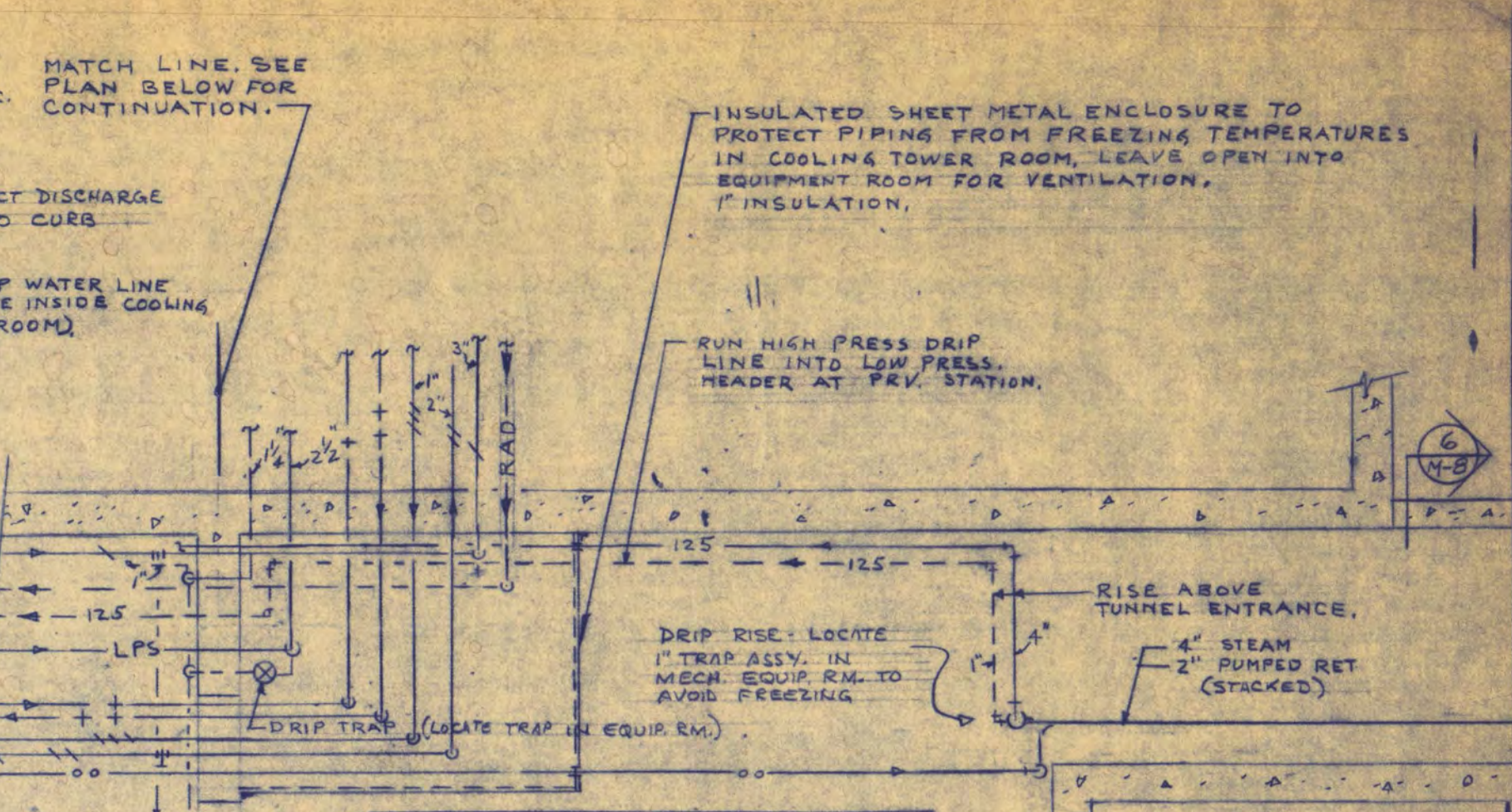
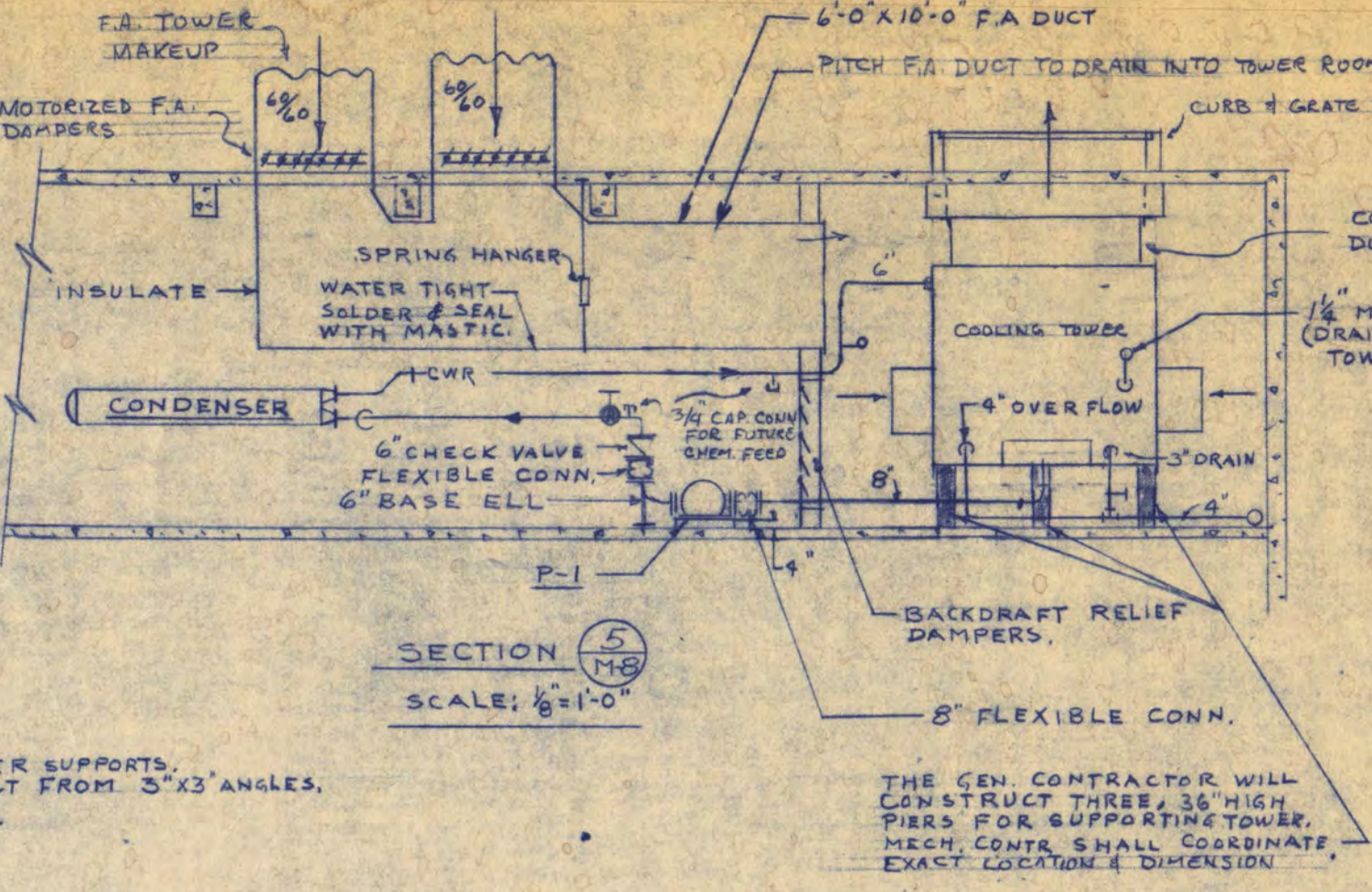
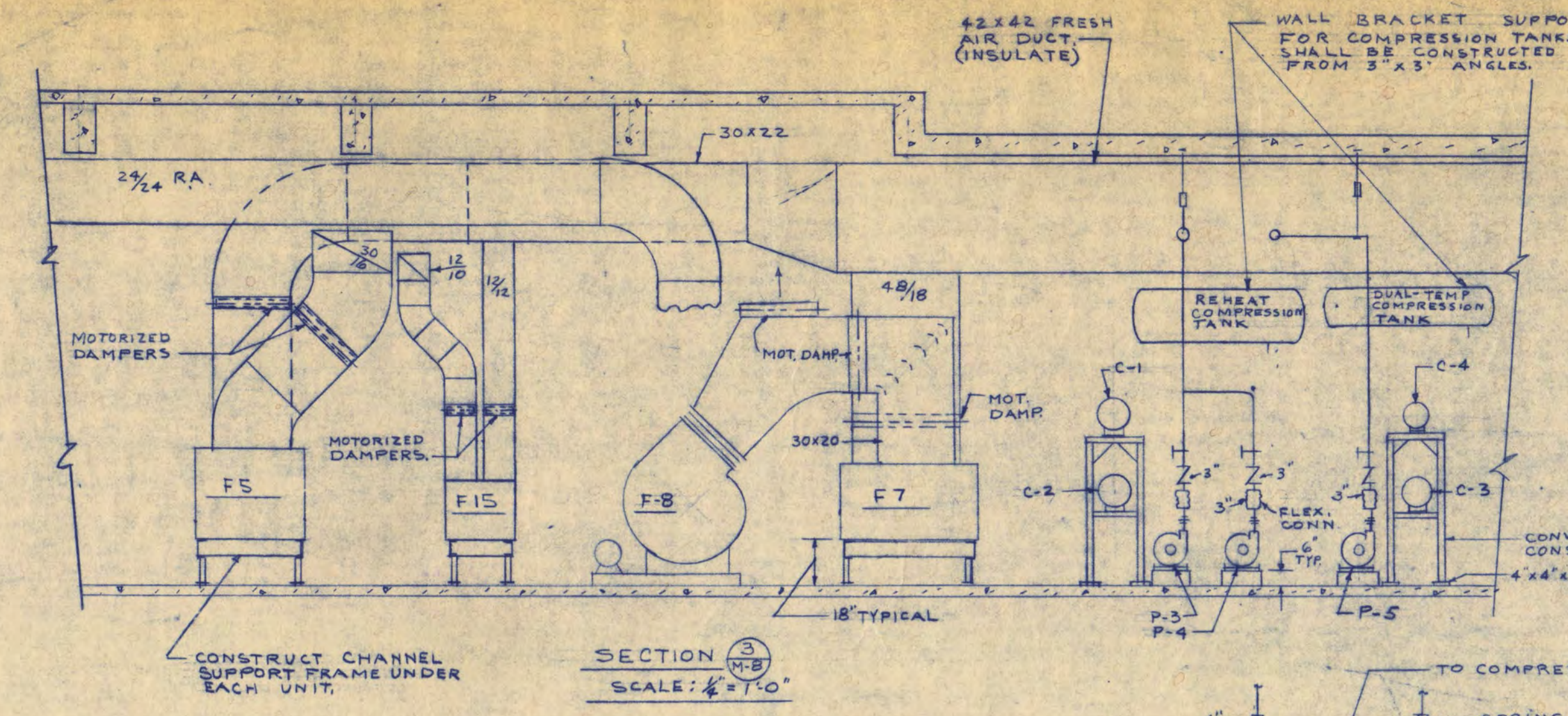
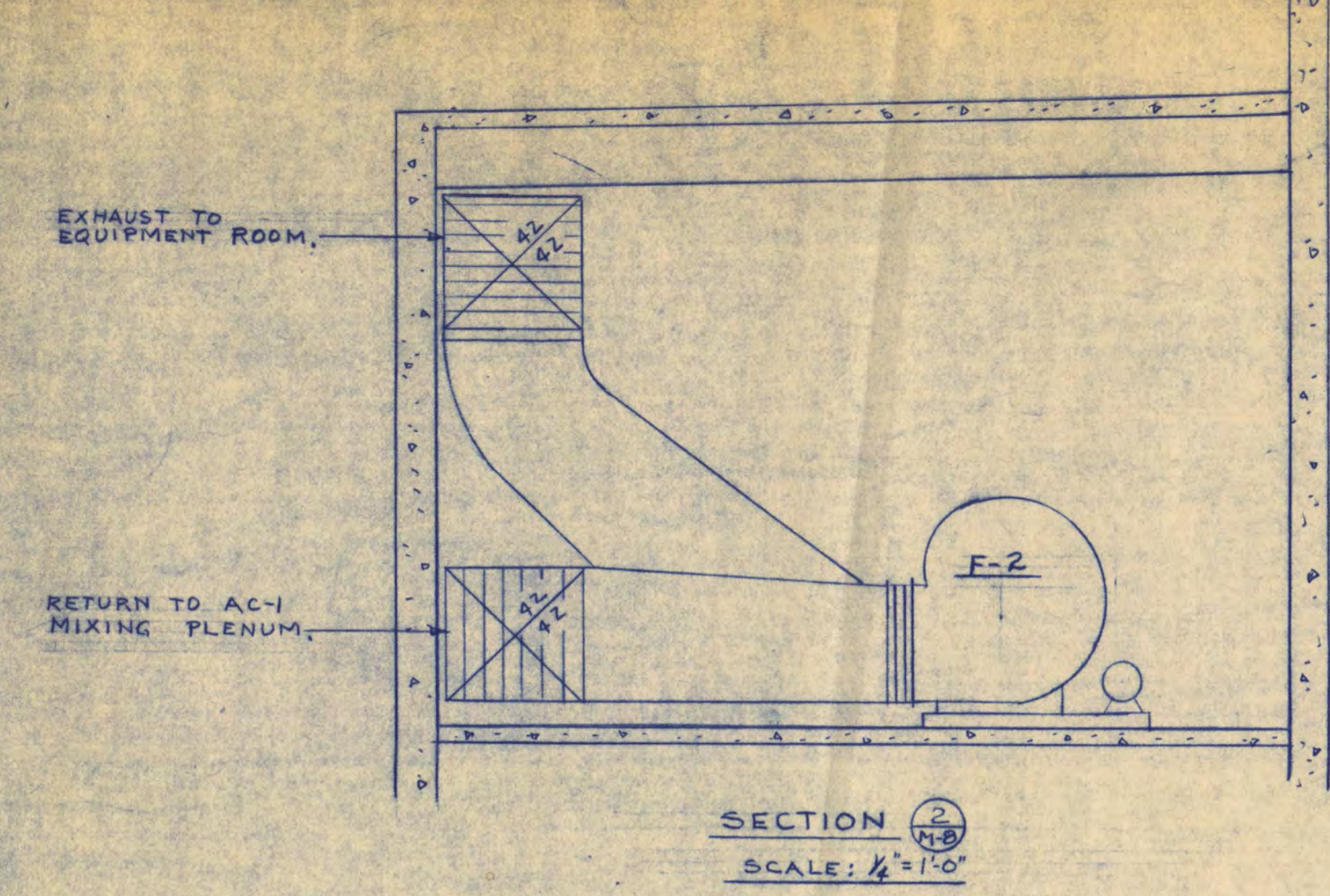
WASTE & VENT RISER DIAGRAMS  
(NO SCALE)



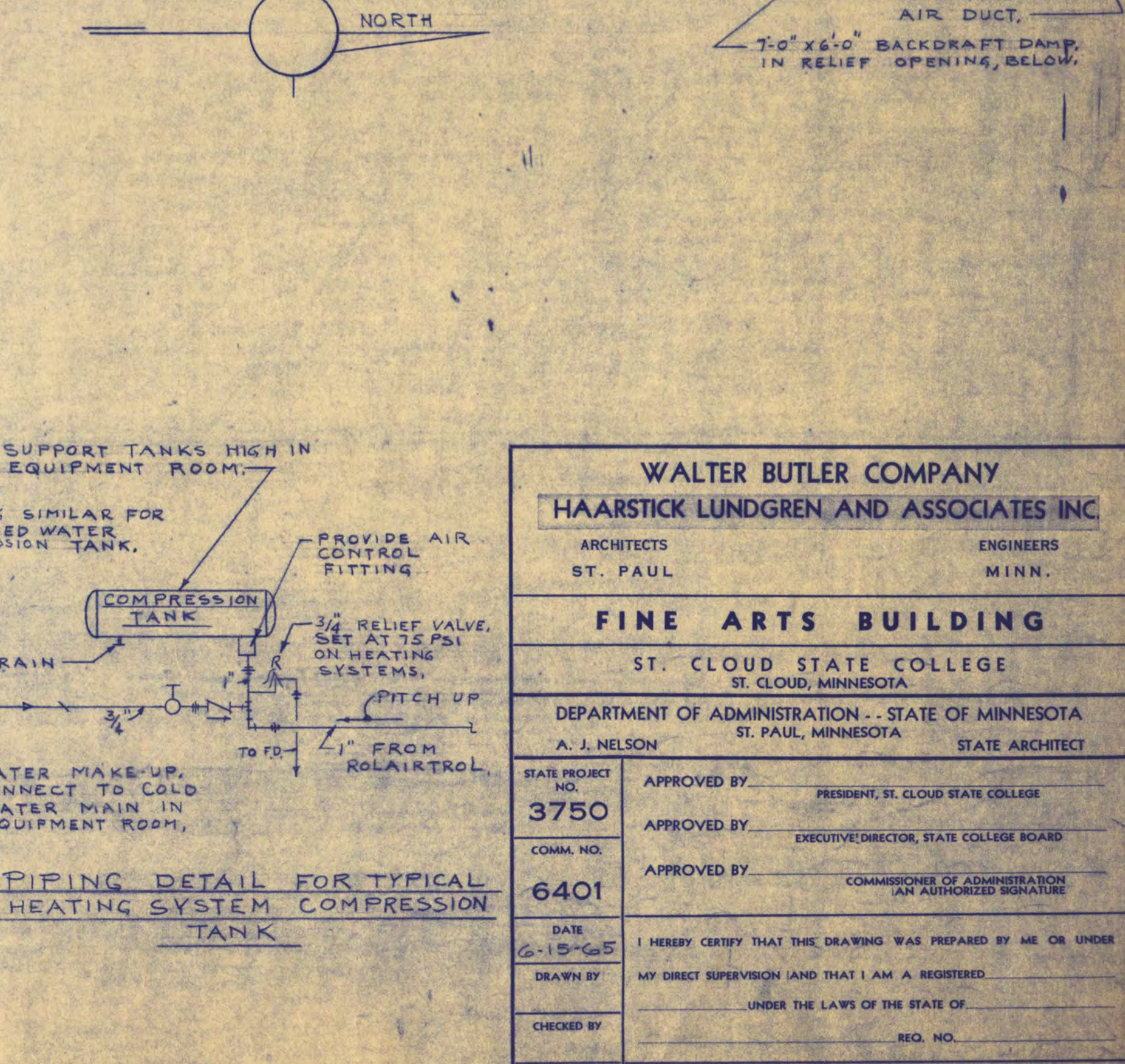
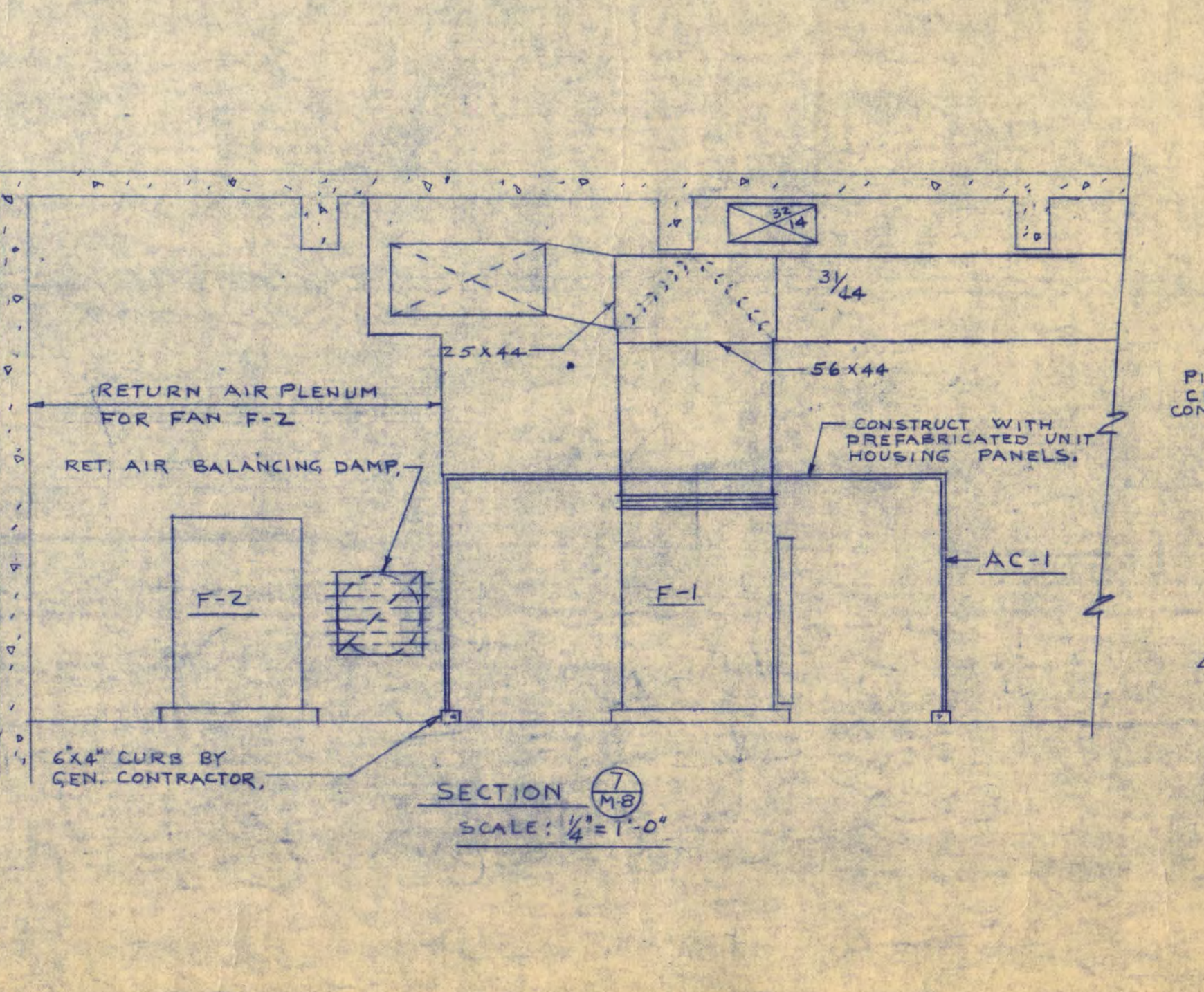
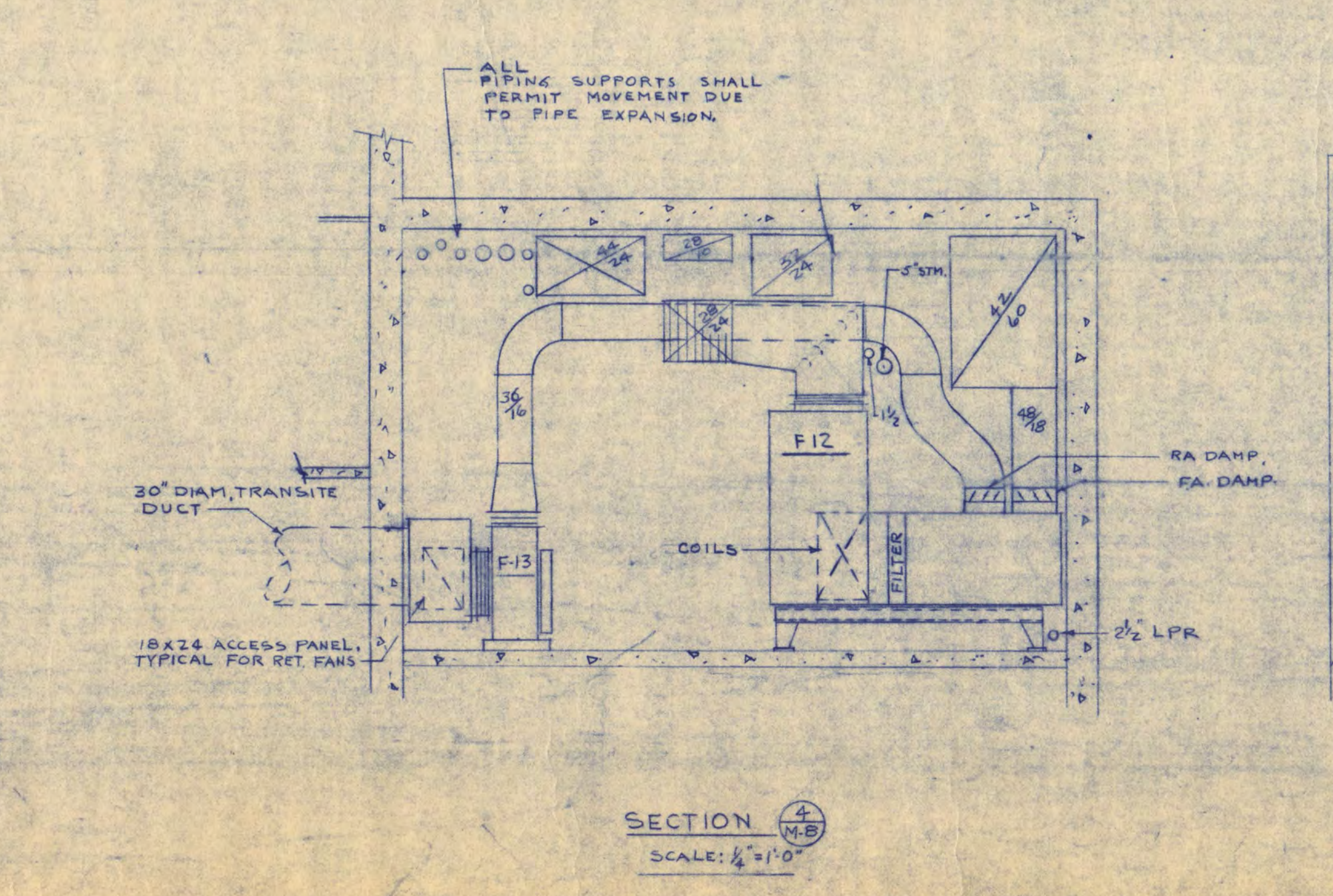
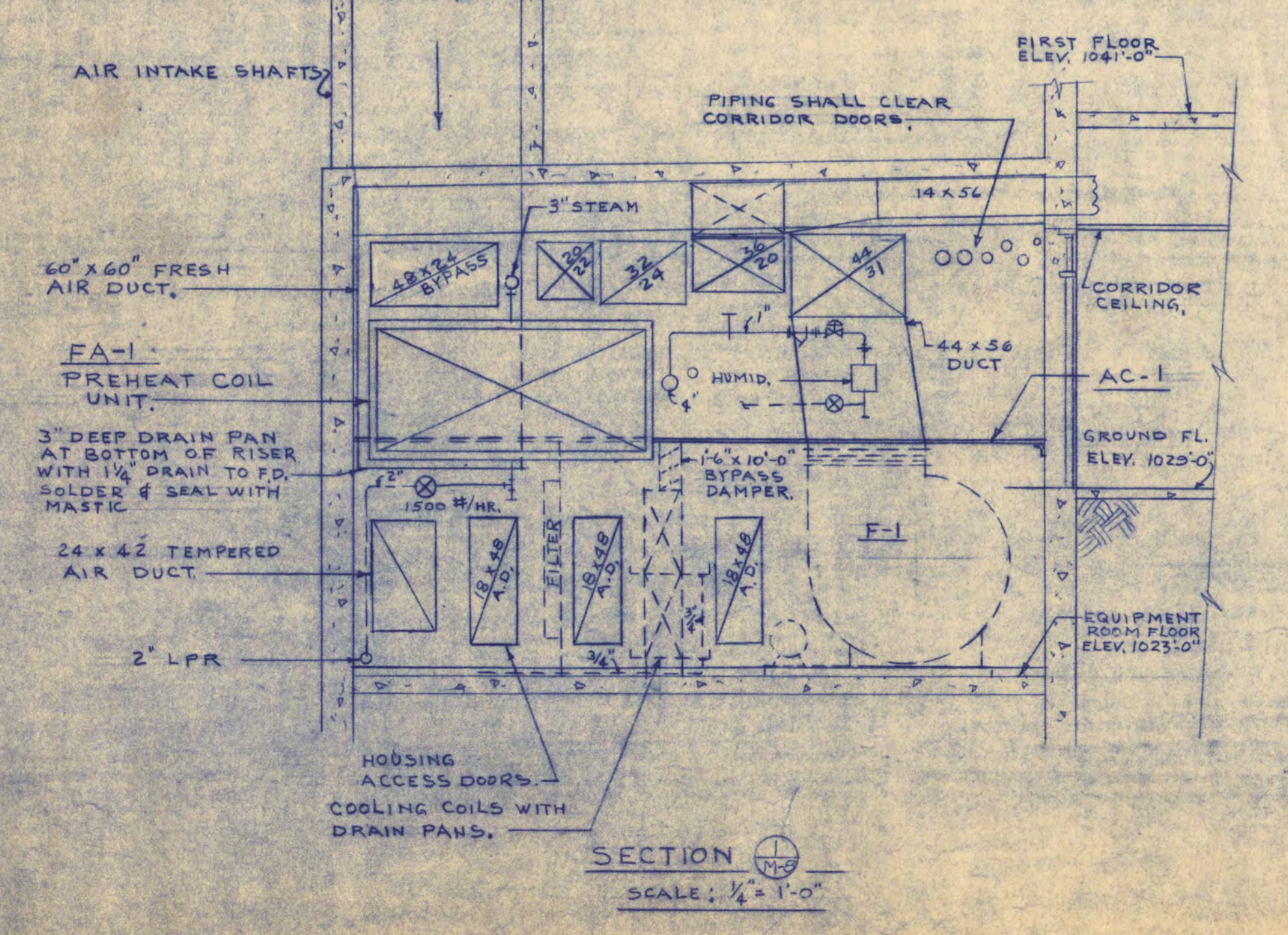
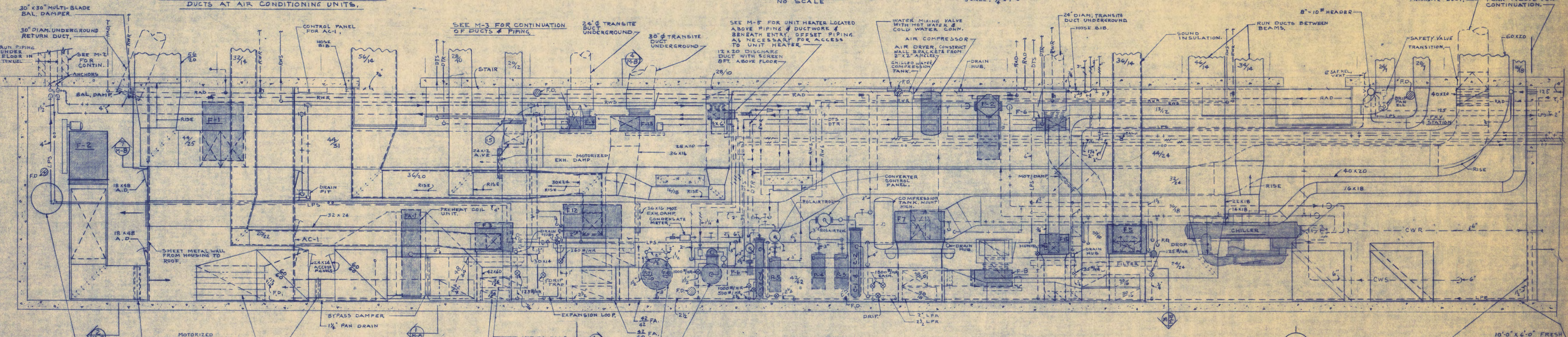
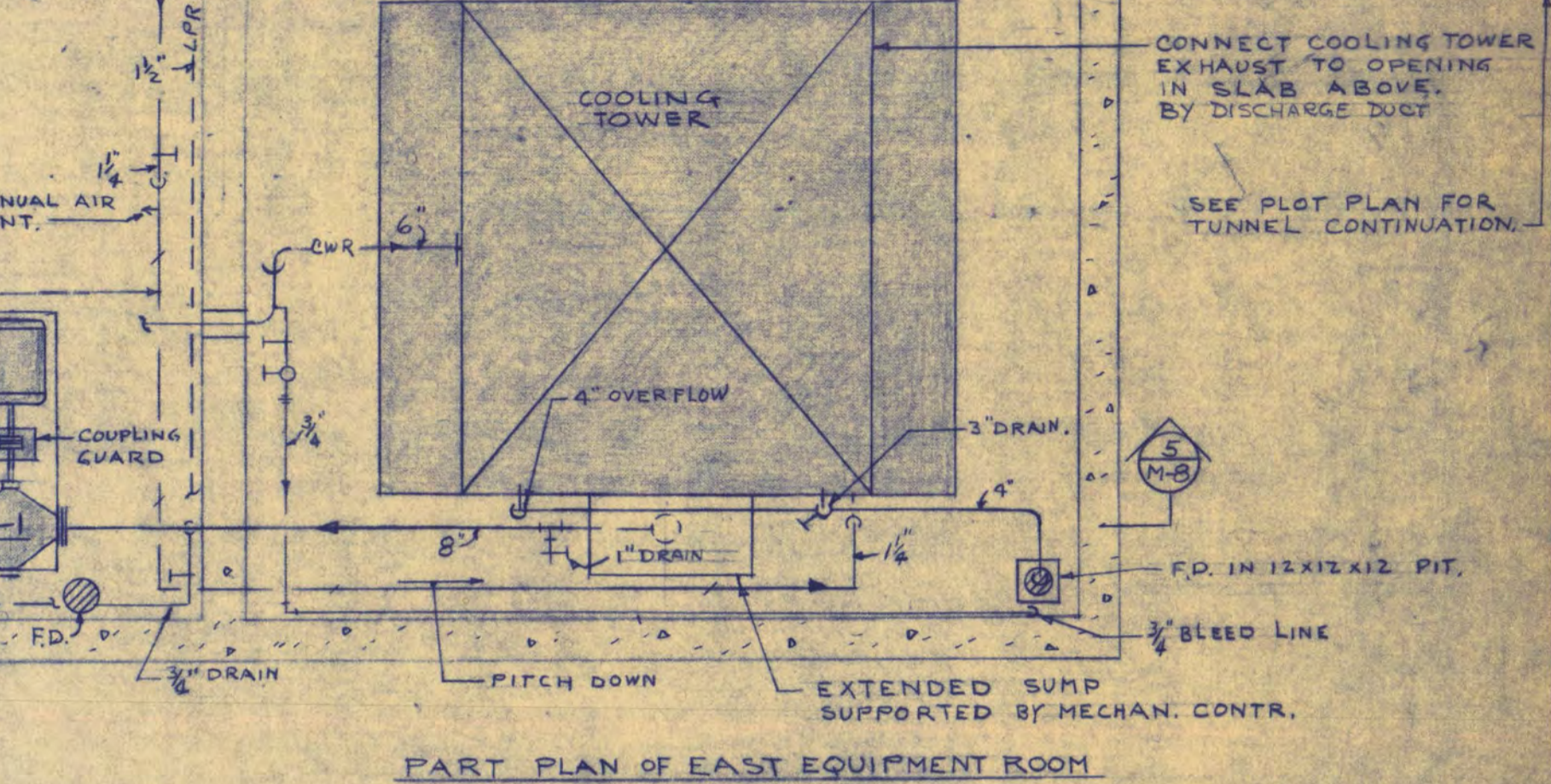
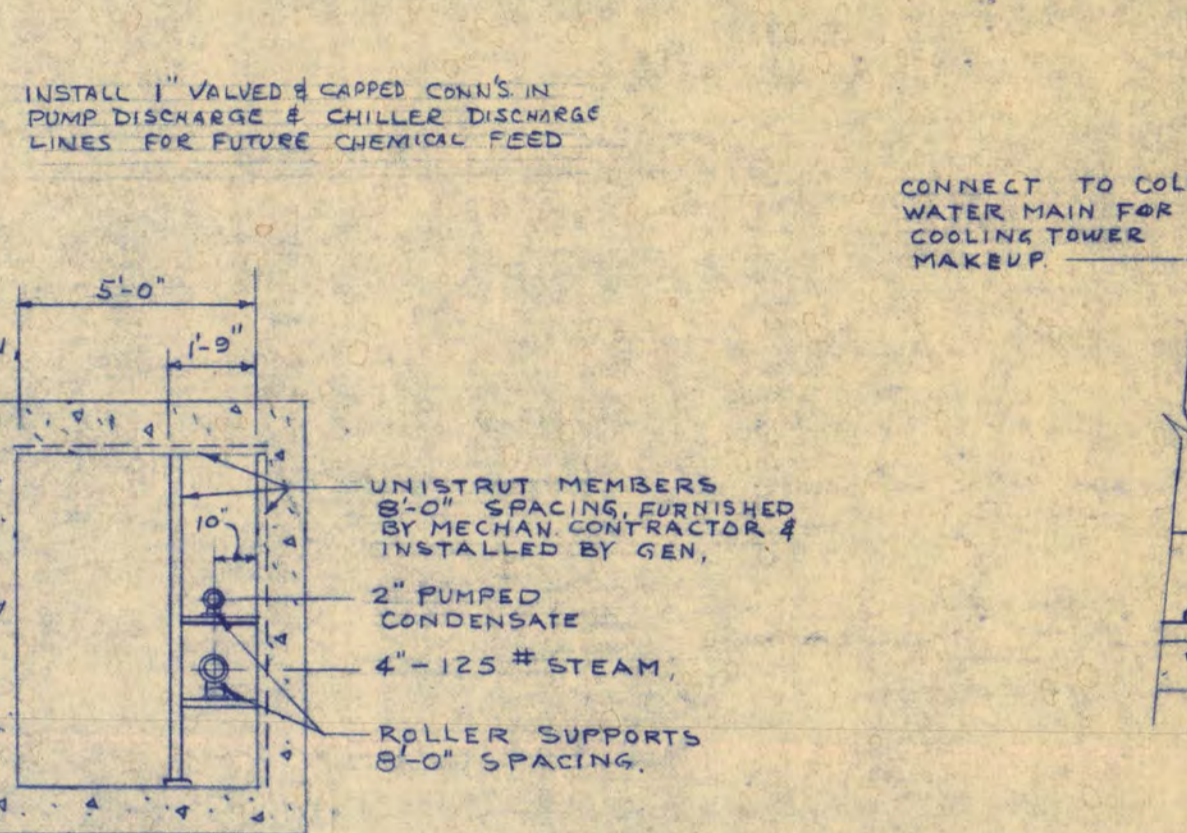
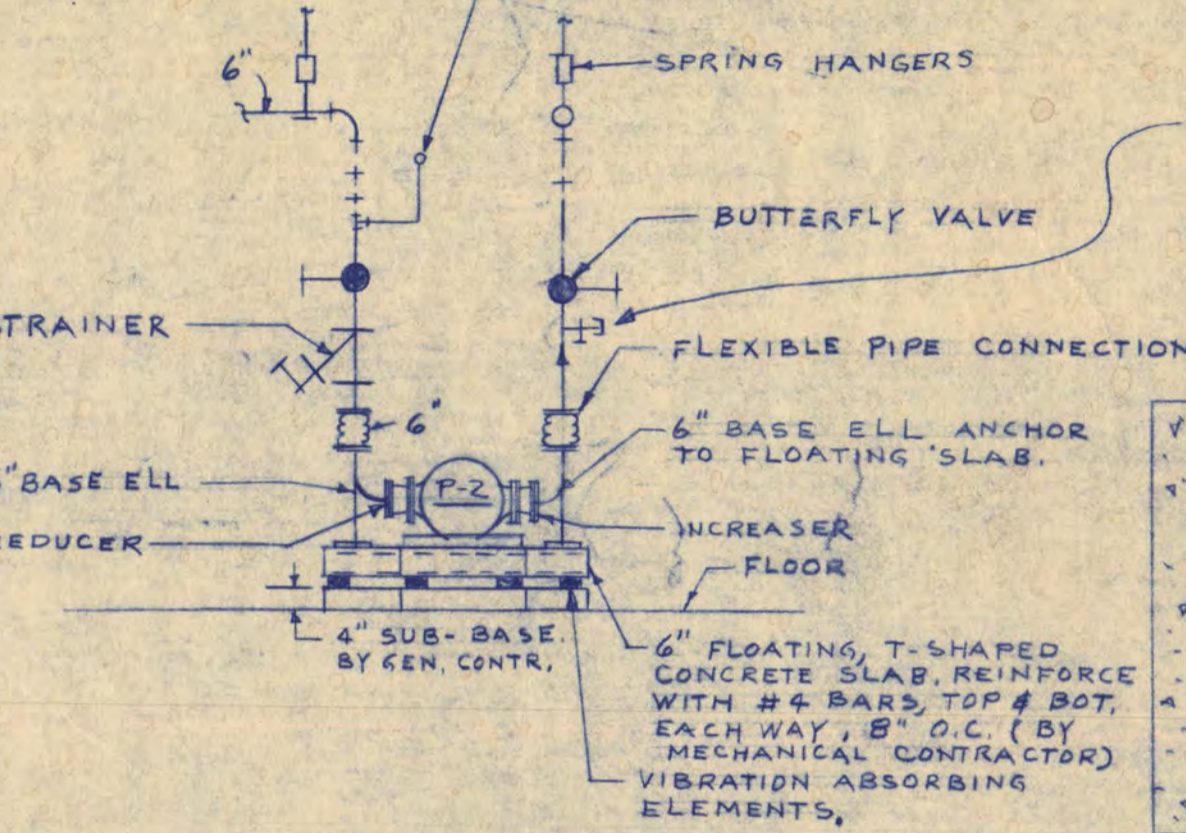
WATER RISER DIAGRAMS  
(NO SCALE)

SOAP RISERS  
(NO SCALE)

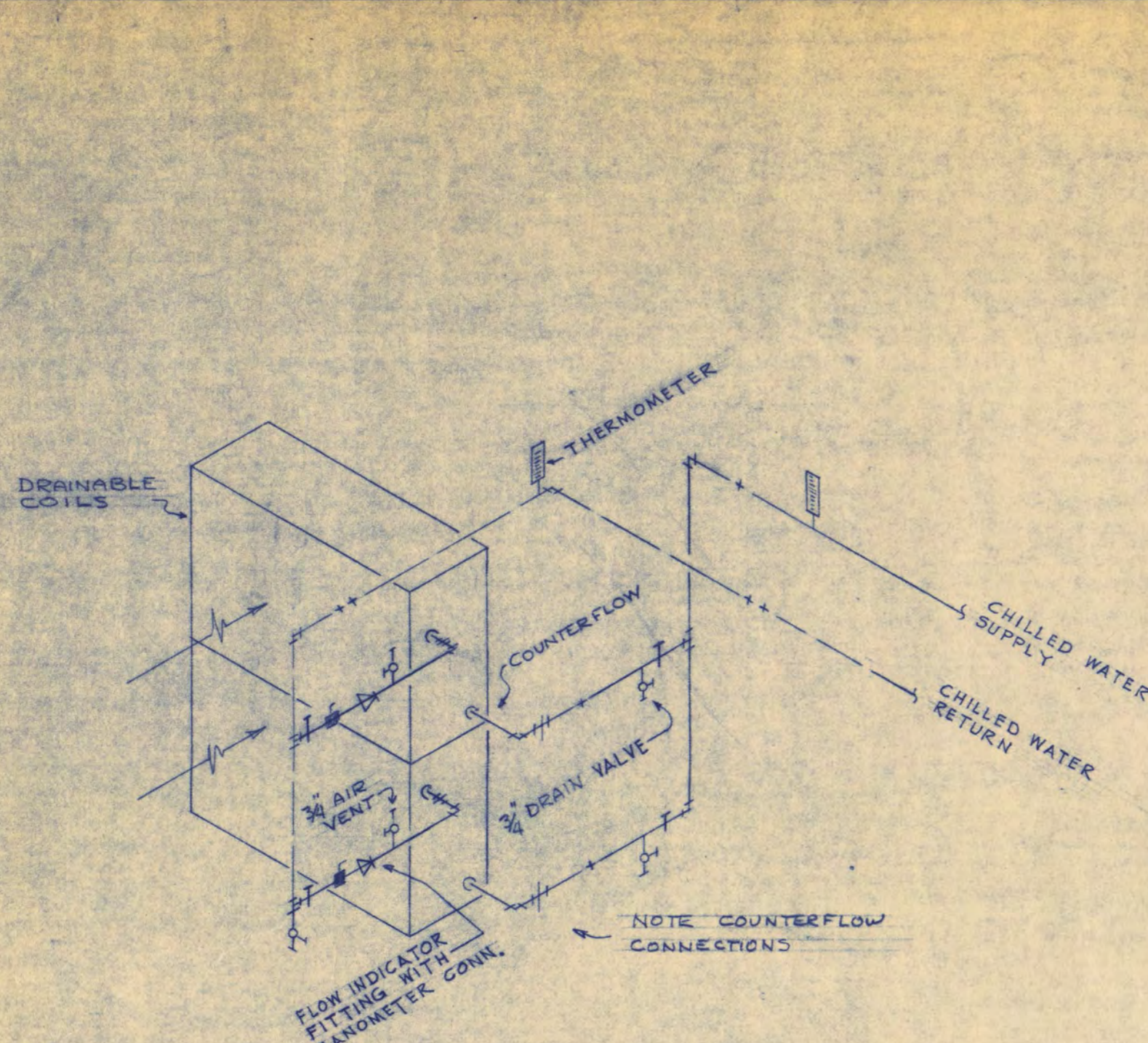
**WALTER BUTLER COMPANY**  
**HAARSTICK LUNDGREN AND ASSOCIATES INC.**  
 ARCHITECTS ST. PAUL ENGINEERS MINN.  
**FINE ARTS BUILDING**  
 ST. CLOUD STATE COLLEGE  
 ST. CLOUD, MINNESOTA  
 DEPARTMENT OF ADMINISTRATION - STATE OF MINNESOTA  
 ST. PAUL, MINNESOTA STATE ARCHITECT  
 A. J. NELSON  
 STATE PROJECT NO. 3750  
 APPROVED BY: PRESIDENT, ST. CLOUD STATE COLLEGE  
 APPROVED BY: EXECUTIVE DIRECTOR, STATE COLLEGE BOARD  
 COMM. NO. 6401  
 APPROVED BY: COMMISSIONER OF ADMINISTRATION (AN AUTHORIZED SIGNATURE)  
 DATE 6/15/65  
 DRAWN BY J.E. VAN  
 CHECKED BY B.G.M.  
 SHEET NO. M-7  
 MECHANICAL  
 MECHANICAL ROOM PLANS & DETAILS  
 REVISED 5/16/66



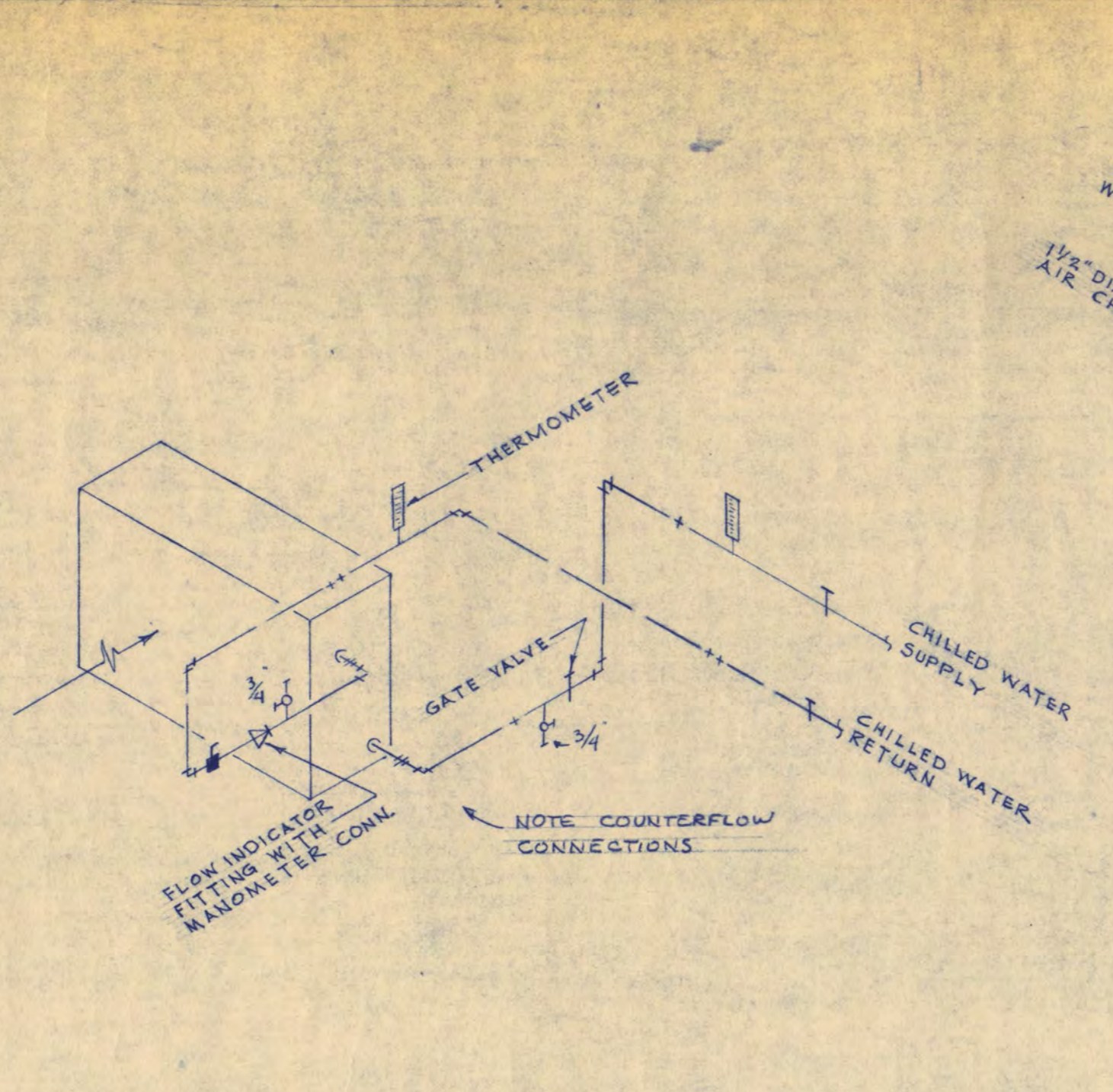
- NOTES:
- SEE PIPING DIAGRAMS FOR PIPING RUNOUT DETAILS TO EQUIPMENT (M-3)
  - PIPING AND DUCTWORK SHALL BE CAREFULLY ARRANGED FOR APPEARANCE & WALK SPACE & TO PERMIT EASY REMOVAL OF COILS AND TUBE BUNDLES FROM EQUIPMENT & TO FACILITATE ACCESS AND SERVICING.
  - PIPING RISERS SHALL BE SUPPORTED BY SPRING HANGERS NEAR ALL PUMPS & EQUIPMENT.
  - PIPING SHALL BE CAREFULLY ALIGNED AT PUMPS SO THAT FLANGES OR UNIONS CAN BE SPRUNG TOGETHER BY HAND.
  - CONTROL PANELS FOR EACH AIR CONDITIONING UNIT SHALL BE CONVENIENTLY LOCATED ON NEARBY WALL OR FREE STANDING SUPPORTS.
  - ALL FLOW INDICATOR FITTINGS SHALL BE INSTALLED IN STRAIGHT RUN OF PIPE AS RECOMMENDED BY MANUFACTURER.
  - SEE SHEET M-3 FOR SYMBOLS.
  - SEE M-10 FOR PIPING SYSTEM DIAGRAMS AND SIZES.
  - COORDINATE WITH GENERAL CONTRACTOR.



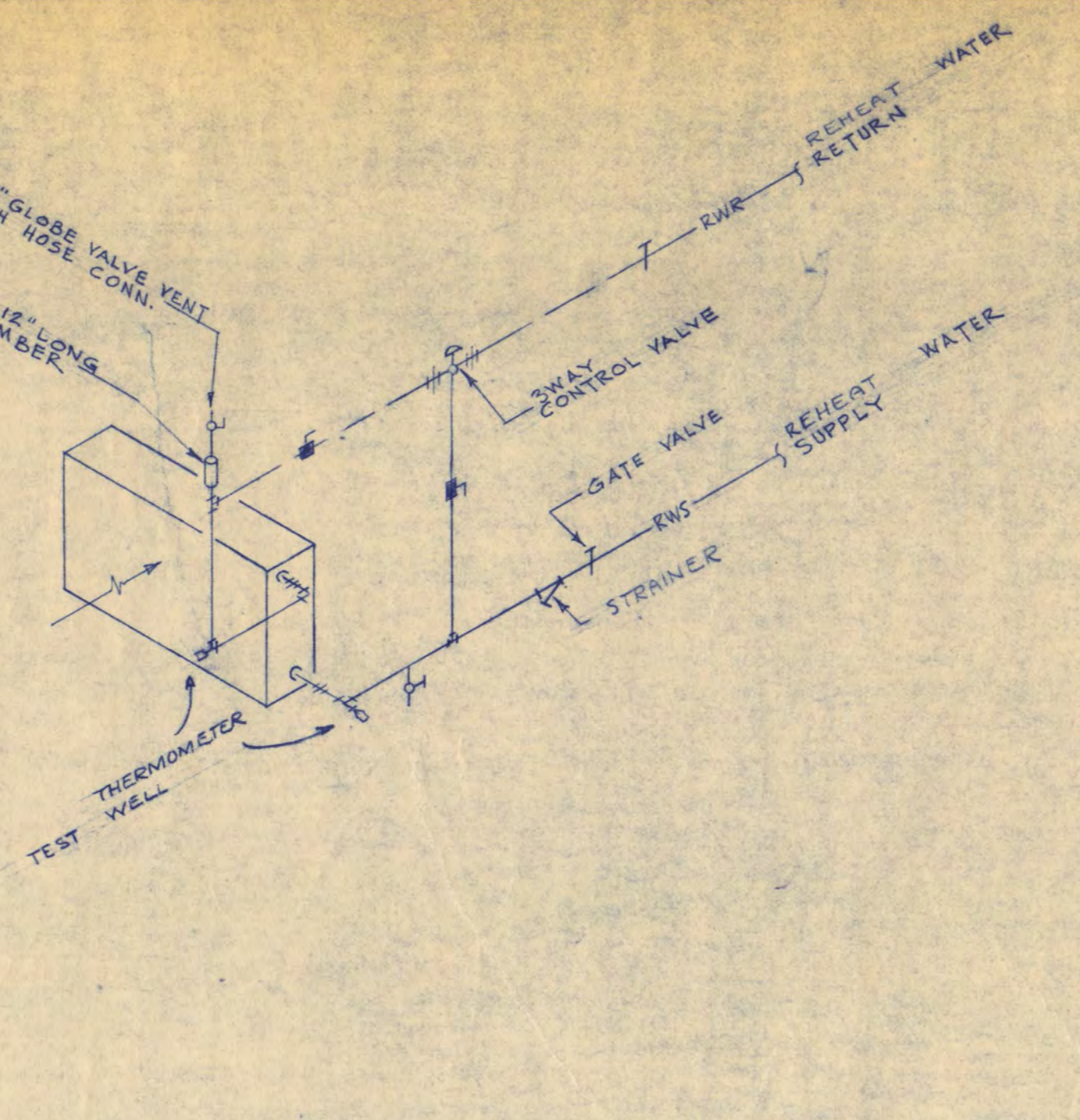
<b>WALTER BUTLER COMPANY</b> <b>HAARSTICK LUNDGREN AND ASSOCIATES INC.</b> ARCHITECTS ST. PAUL ENGINEERS MINN.	
<b>FINE ARTS BUILDING</b> ST. CLOUD STATE COLLEGE ST. CLOUD, MINNESOTA DEPARTMENT OF ADMINISTRATION - STATE OF MINNESOTA A. J. NELSON STATE ARCHITECT	
STATE PROJECT NO. <b>3750</b> COMM. NO. <b>6401</b> DATE <b>6-15-65</b> DRAWN BY CHECKED BY SHEET NO. <b>M-8</b> OF SHEETS	APPROVED BY: PRESIDENT, ST. CLOUD STATE COLLEGE APPROVED BY: EXECUTIVE DIRECTOR, STATE COLLEGE BOARD APPROVED BY: COMMISSIONER OF ADMINISTRATION (AN AUTHORIZED SIGNATURE) I HEREBY CERTIFY THAT THE DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINN. REG. NO.
REVISED 3/16/66	MECHANICAL ROOM PLANS & DETAILS



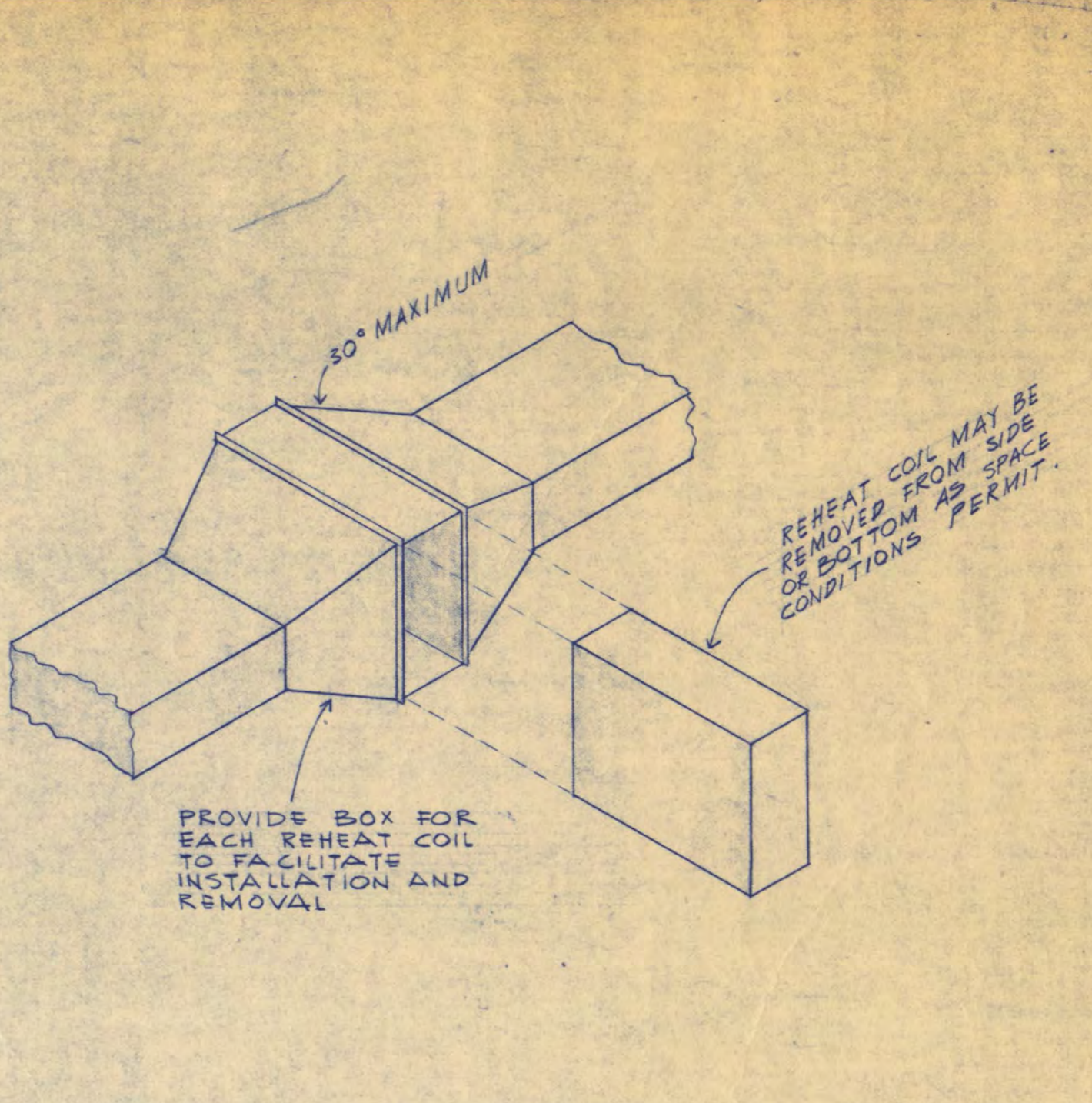
TYPICAL MULTIPLE COIL PIPING IN AIR HANDING UNITS



TYPICAL SINGLE COIL PIPING IN AIR HANDING UNITS

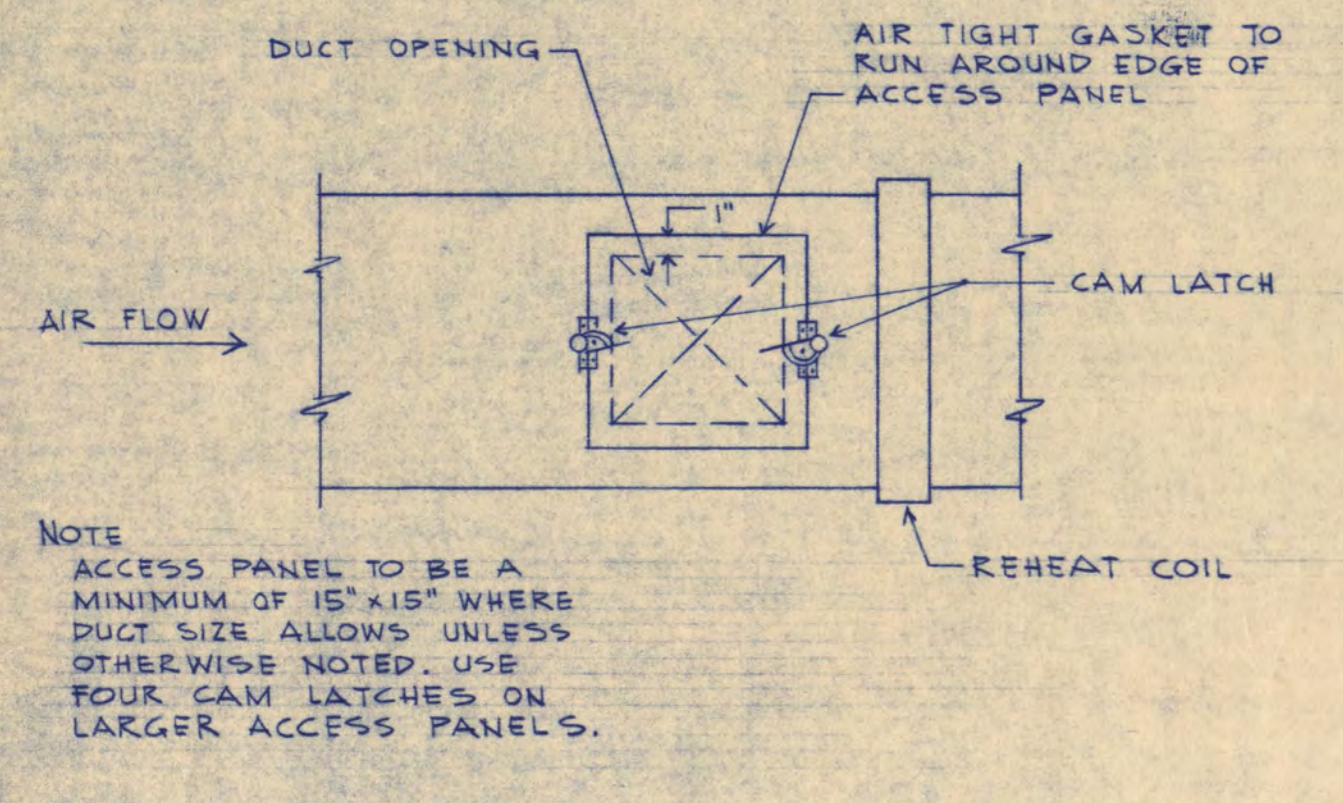


TYPICAL REHEAT COIL PIPING

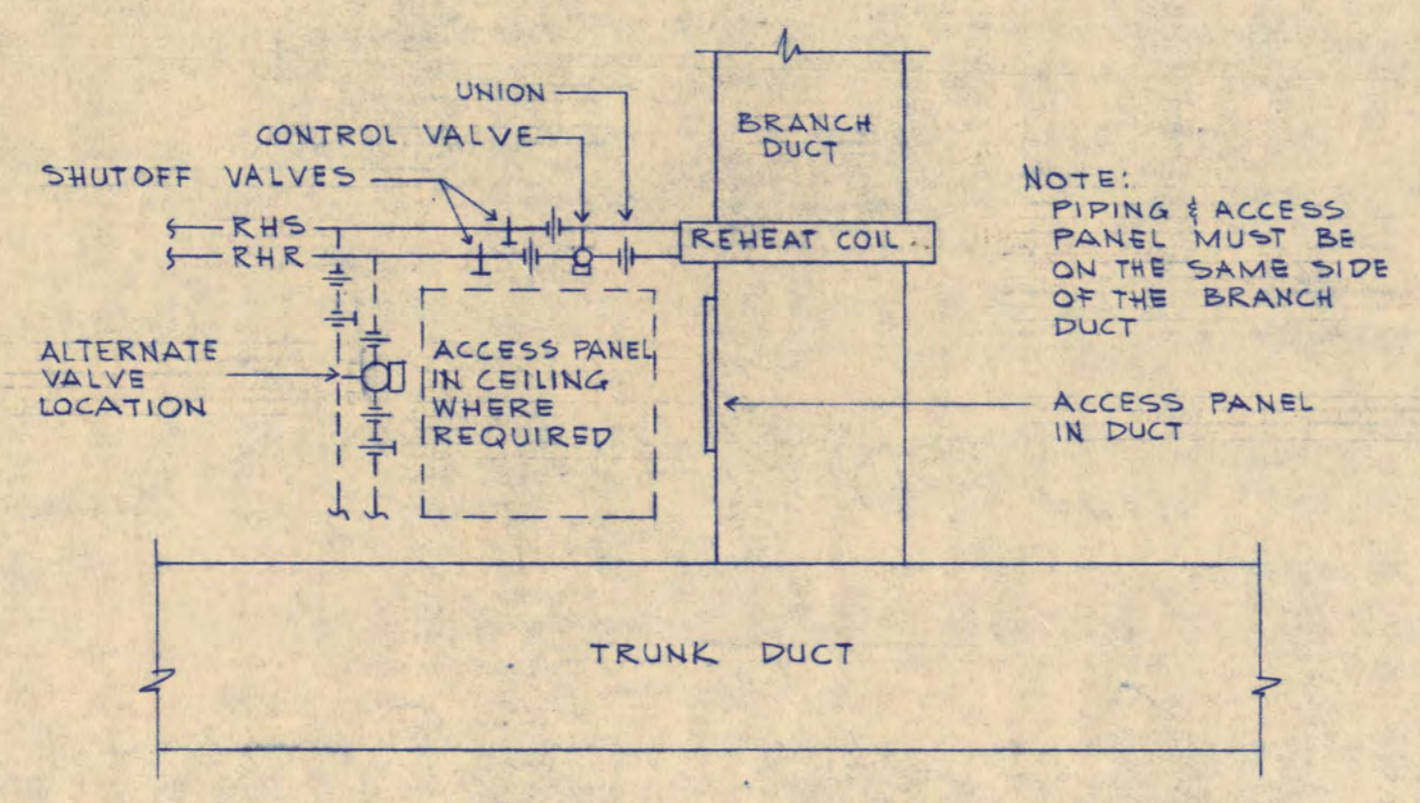


TYPICAL REHEAT COIL BOX

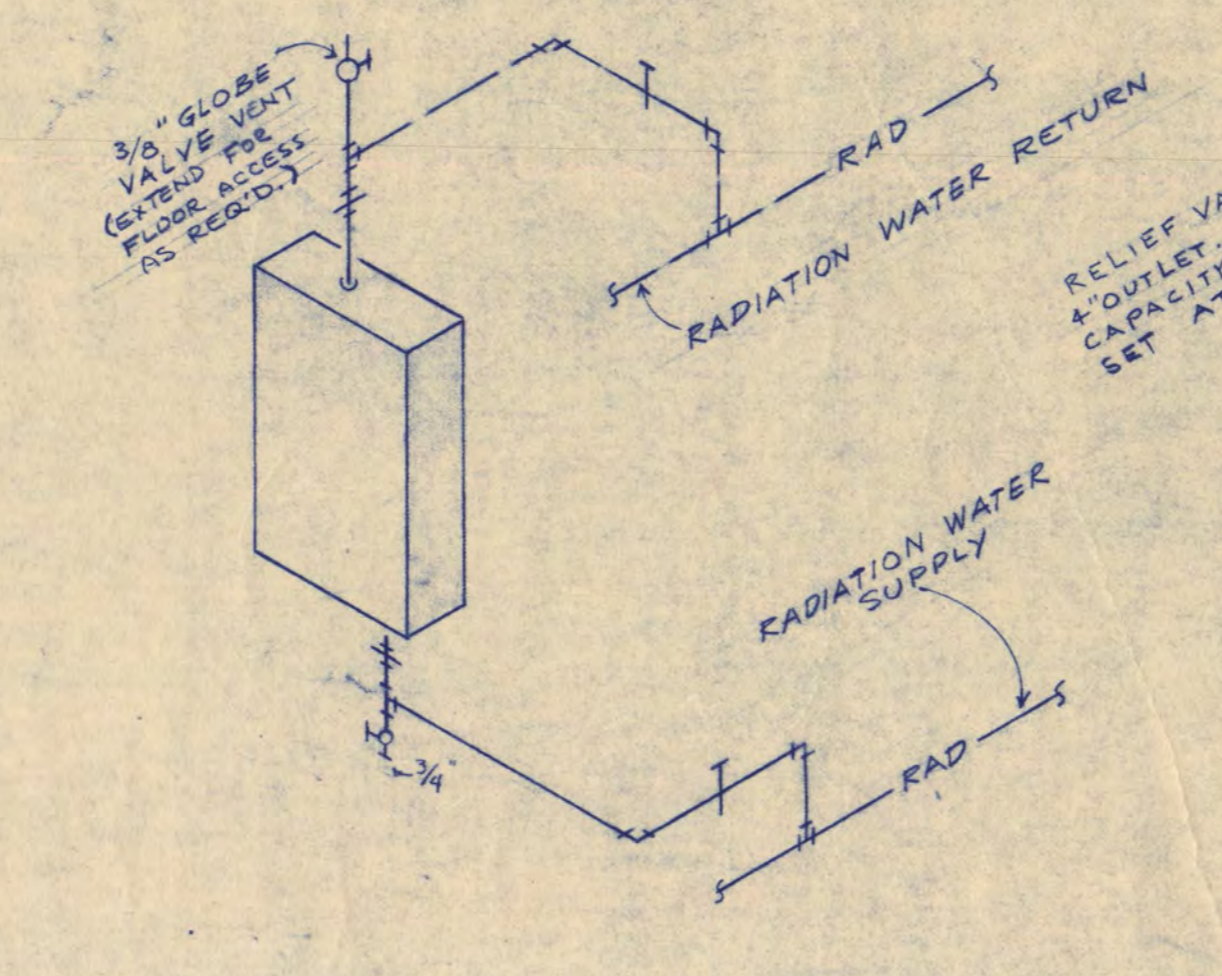
SYMBOLS		IDENTIFICATION
DTR	DTS	DUAL TEMP. SUPPLY
DTR	DTR	DUAL TEMP. RETURN
+	+	CHILLED WATER SUPPLY
+	+	CHILLED WATER RETURN
RWS	RWR	REHEAT WATER SUPPLY
RWS	RWR	REHEAT WATER RETURN
100	100	100° STEAM SUPPLY
100	100	100° STEAM RETURN
LPS	LPR	LOW PRESSURE STEAM SUPPLY
LPS	LPR	LOW PRESSURE STEAM RETURN
RAD	RAD	RADIATION WATER SUPPLY
RAD	RAD	RADIATION WATER RETURN
CWS	CWR	CONDENSING WATER SUPPLY
CWS	CWR	CONDENSING WATER RETURN
CSW	CSW	DOMESTIC COLD WATER SUPPLY
CSW	CSW	COLD SOFT WATER
HH	HH	DOMESTIC HOT WATER
HH	HH	CIRCULATING HOT WATER
F	F	SANITARY WASTE
F	F	SANITARY VENT
F	F	STORM SEWER
SP	SP	FIRE SUPPLY
SP	SP	FIRE SPRINKLER SUPPLY
WH	WH	WALL HYDRANT
R-1	R-1	16\"/>
R.C.-1	R.C.-1	VERTICAL FAN COIL UNIT
R.C.-1	R.C.-1	HORIZONTAL FAN COIL UNIT
UH-1	UH-1	HORIZONTAL UNIT HEATER
UH-1	UH-1	CABINET UNIT HEATER
⊙	⊙	REHEAT COIL
□	□	REGISTER, GRILLE, LINEAR DIFFUSER
□	□	SQUARE DIFFUSER
⊙	⊙	CIRCULAR DIFFUSER
▨	▨	ACOUSTICALLY LINED DUCT
▨	▨	FLEXIBLE DUCT
⊙	⊙	THERMOSTAT
⊙	⊙	STEAM TRAP
PRV-1	PRV-1	STEAM PRESSURE REDUCING STATION
⊙	⊙	GATE VALVE
⊙	⊙	FLOW INDICATOR FITTING
⊙	⊙	GLOBE VALVE
⊙	⊙	BALANCING VALVE
⊙	⊙	CHECK VALVE
⊙	⊙	UNION
⊙	⊙	STRAINER
⊙	⊙	GLOBE VALVE WITH HOSE CONNECTION
⊙	⊙	AIR VOLUME EXTRACTOR
⊙	⊙	BALL OR BUTTERFLY VALVES



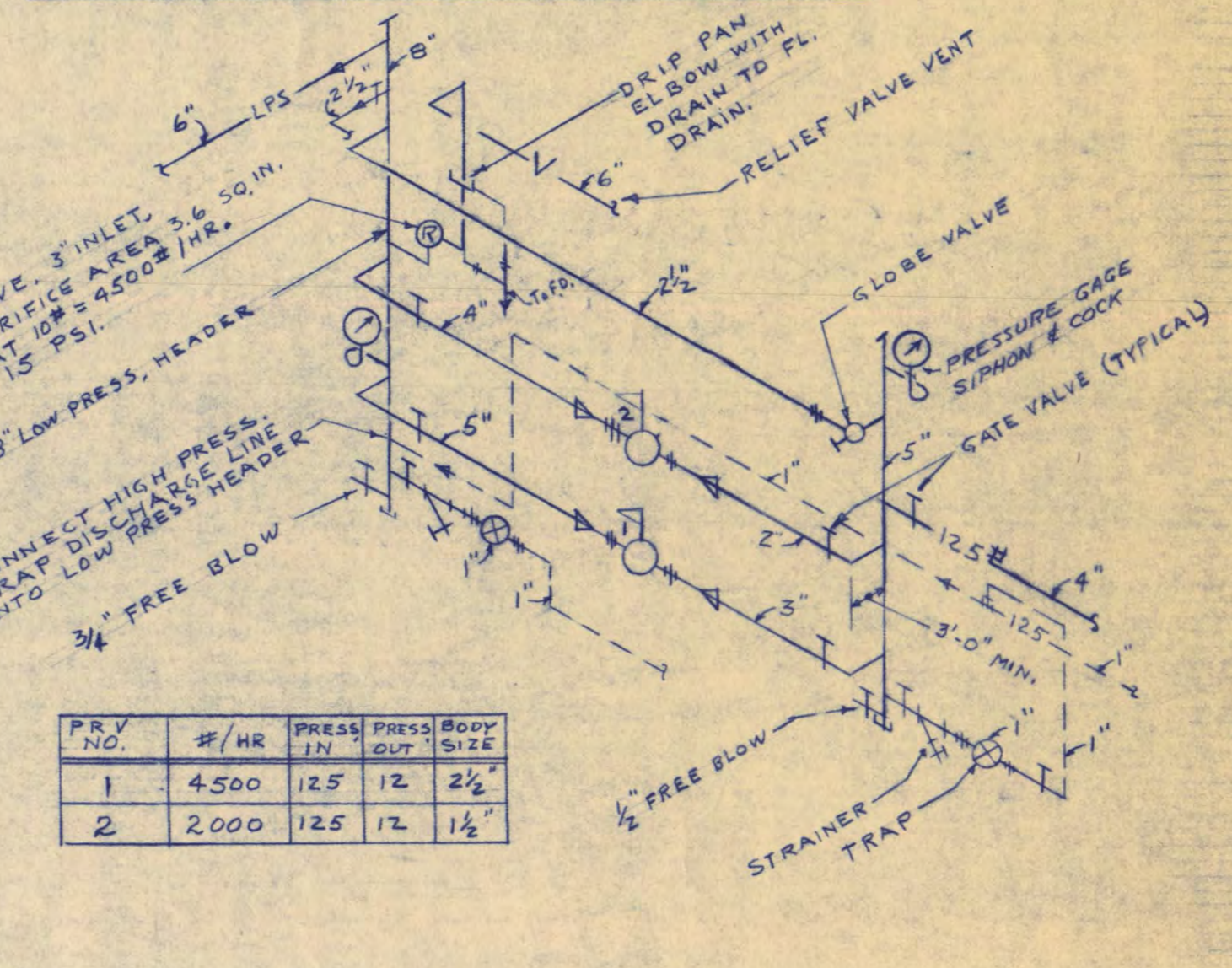
DUCT ACCESS PANEL DETAIL AT REHEAT COILS REQUIRED AT ALL REHEAT COILS NO SCALE



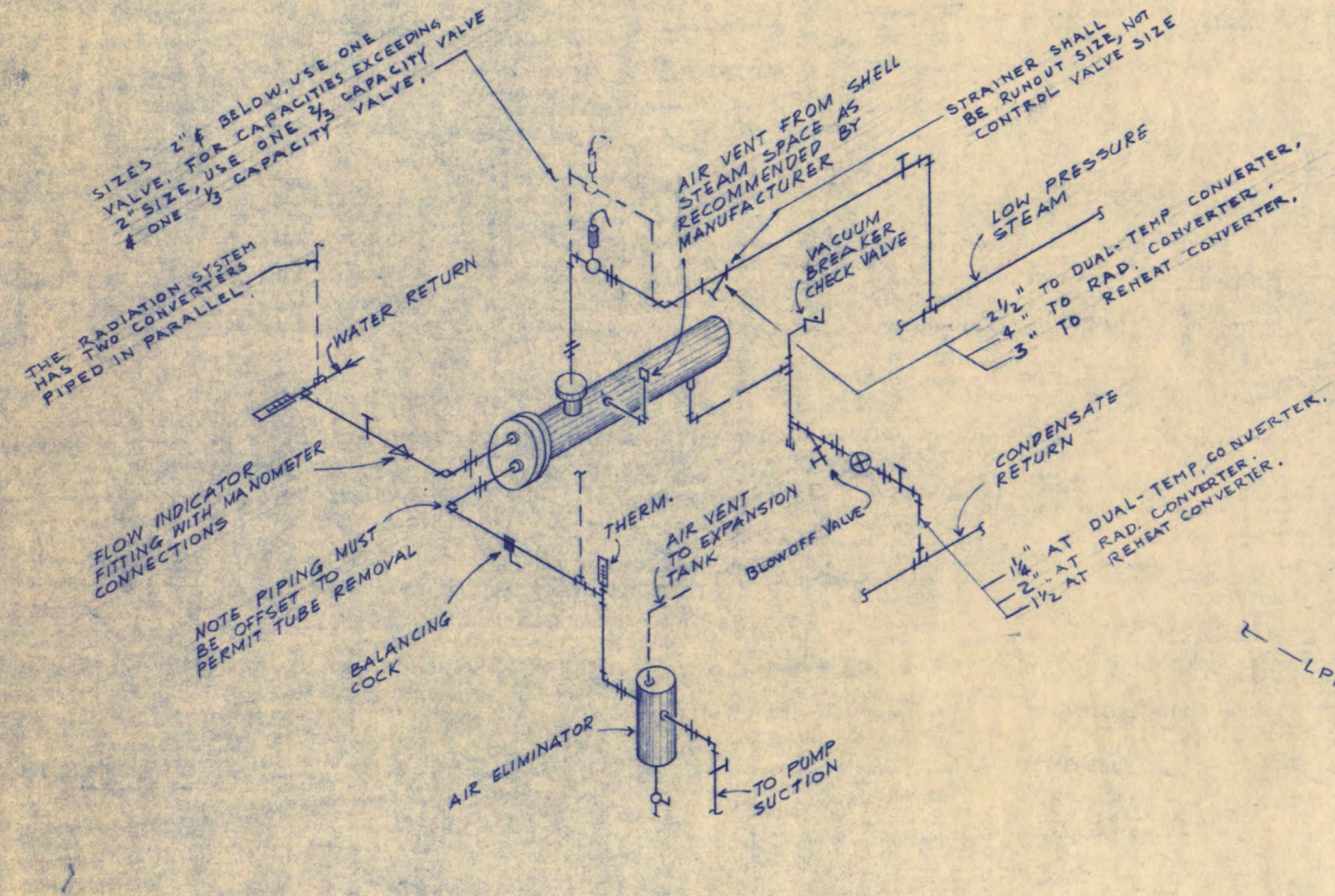
PLAN VIEW SHOWING REHEAT COIL & RELATIVE LOCATION OF ACCESS PANEL NO SCALE



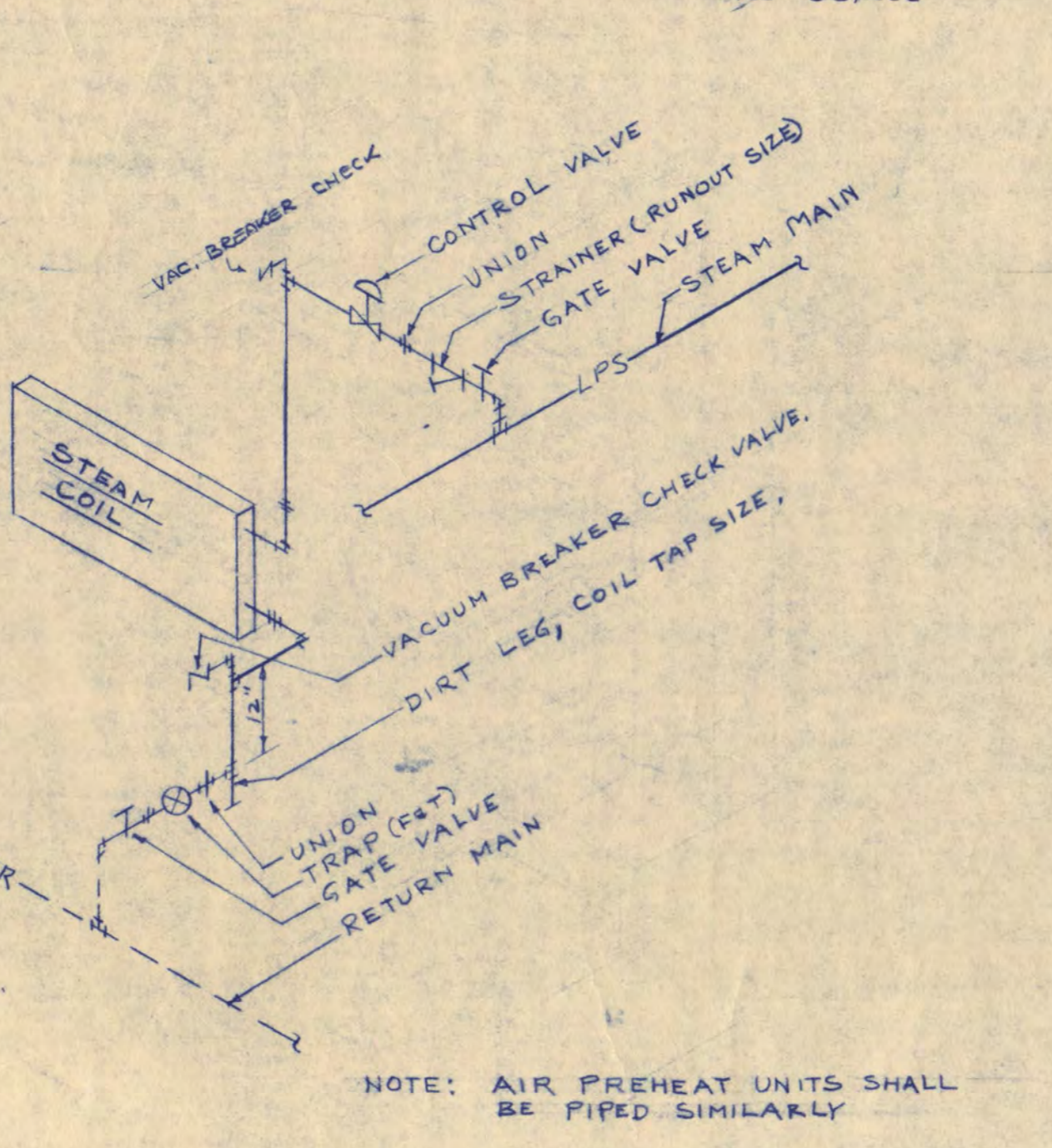
TYPICAL CONNECTION TO UNIT HEATERS



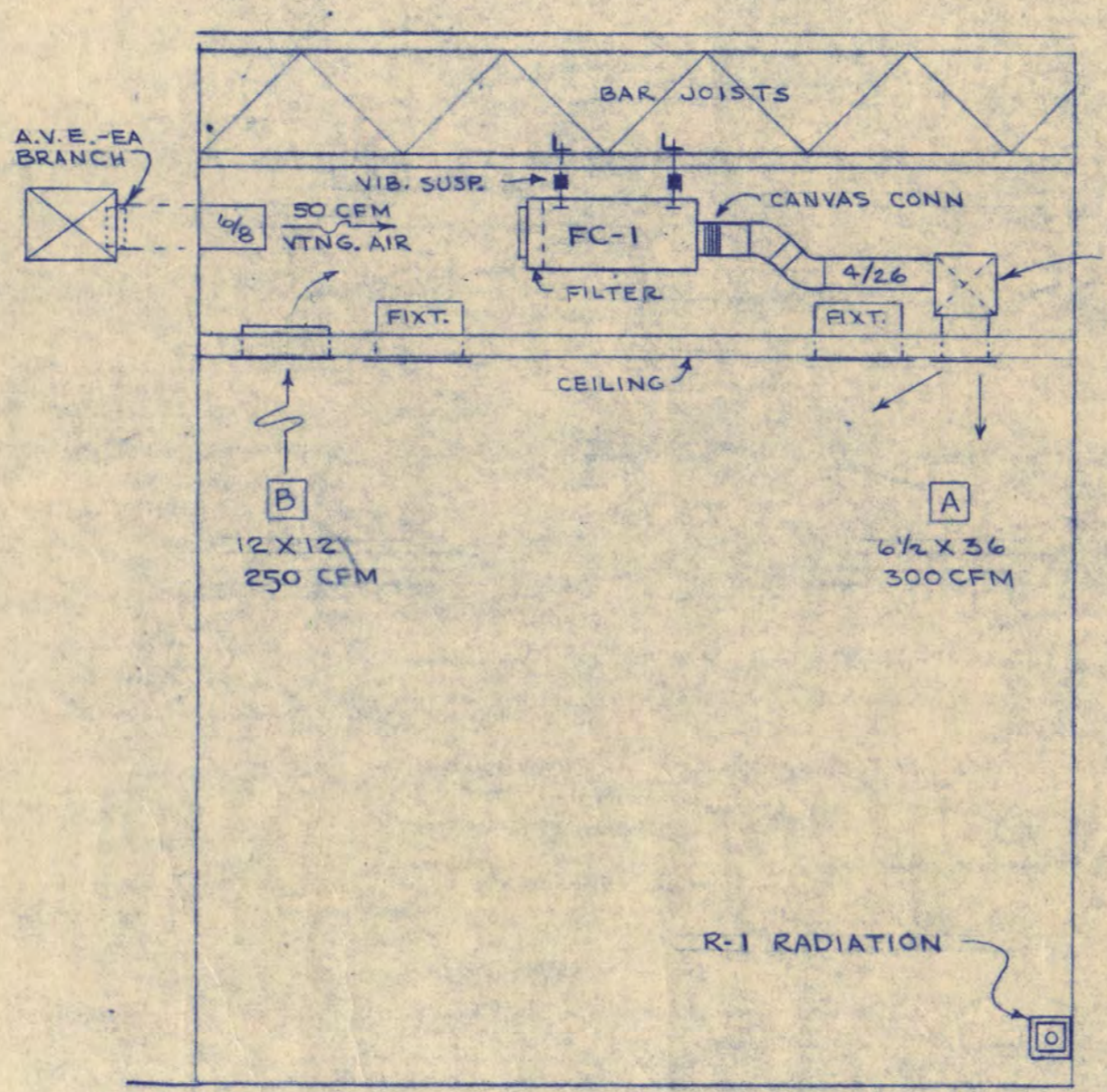
STEAM PRESSURE REDUCING STATION



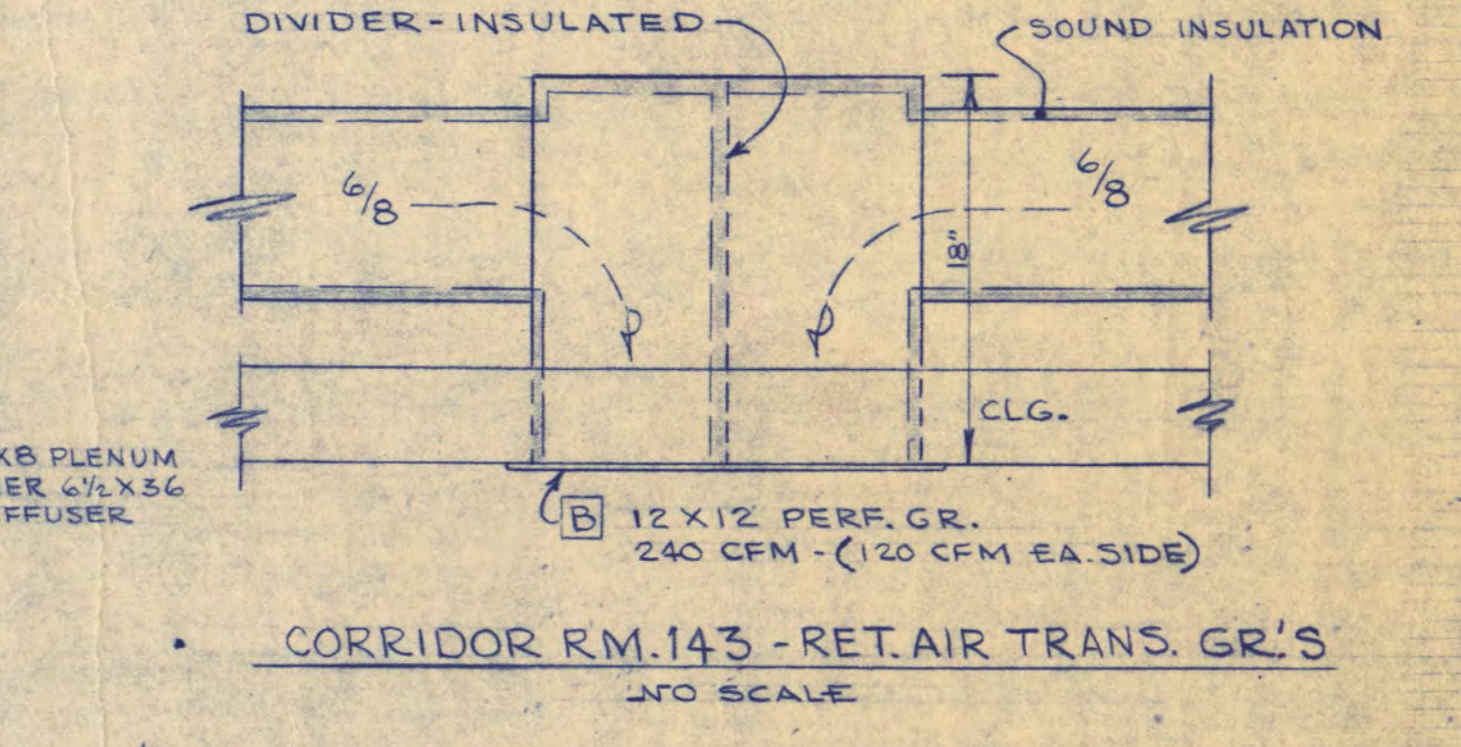
TYPICAL CONNECTIONS TO HOT WATER CONVERTERS



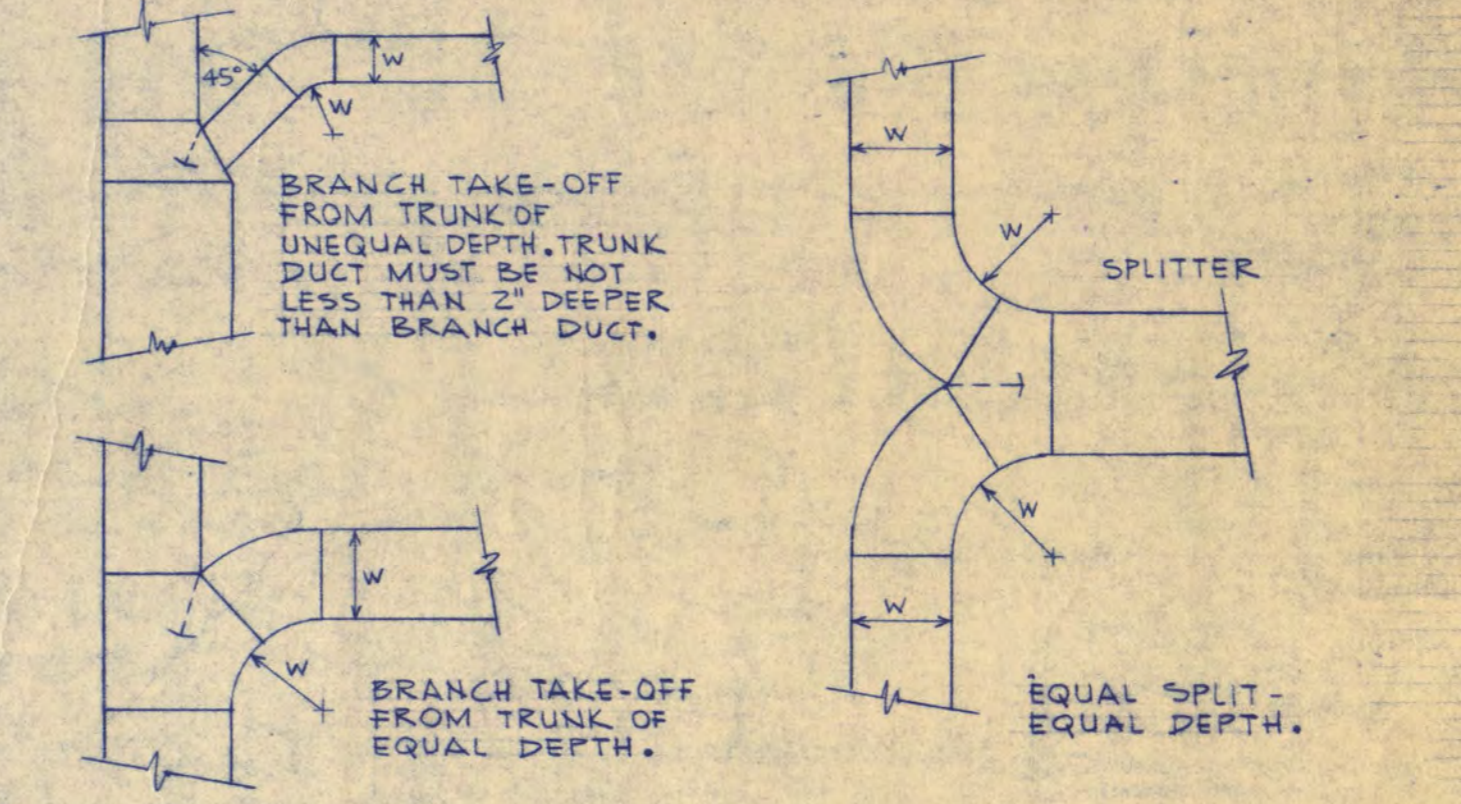
STEAM COIL PIPING



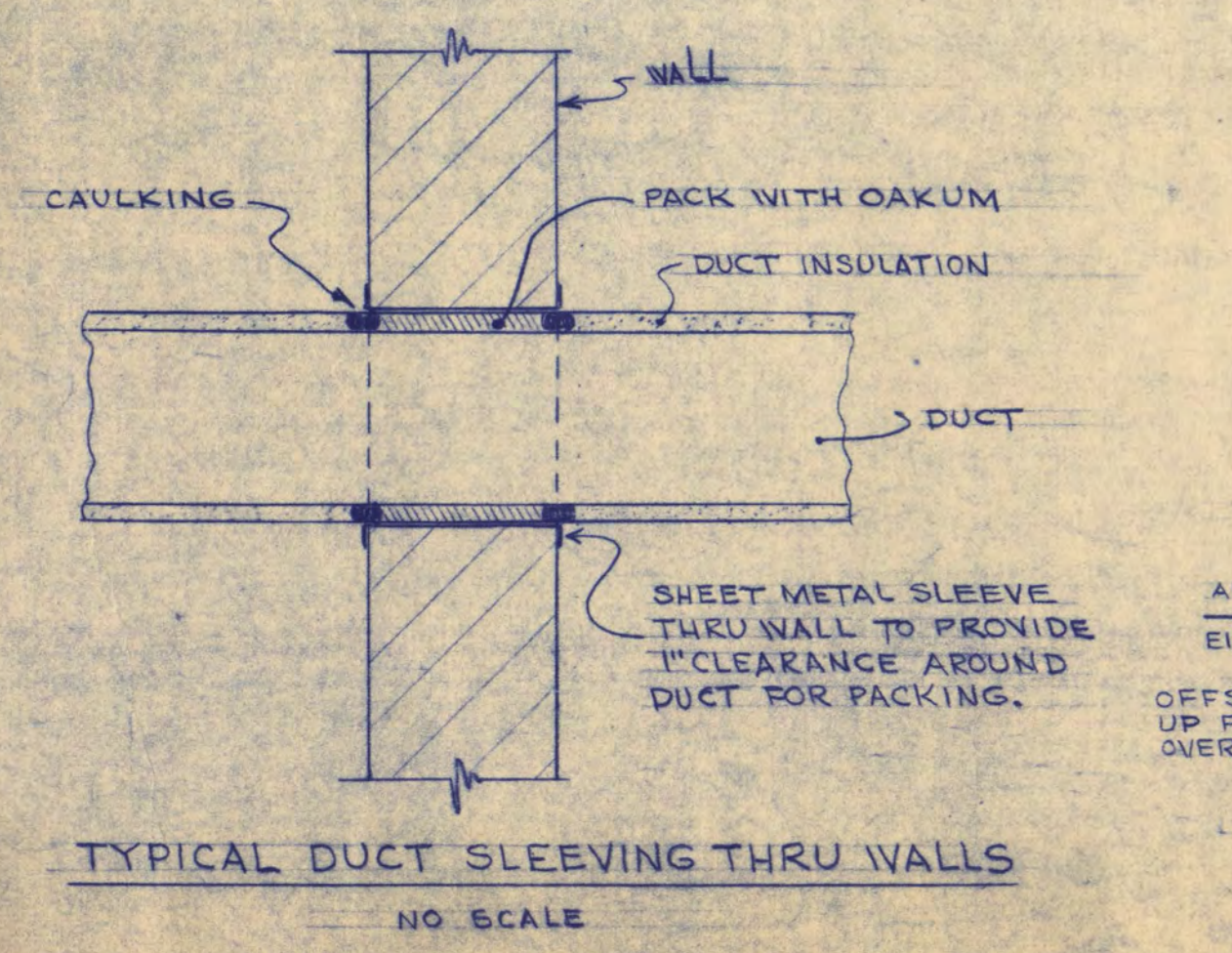
TYPICAL FAN COIL-1 INSTALLATION FACULTY OFFICE AREA SCALE 1/2\"/>



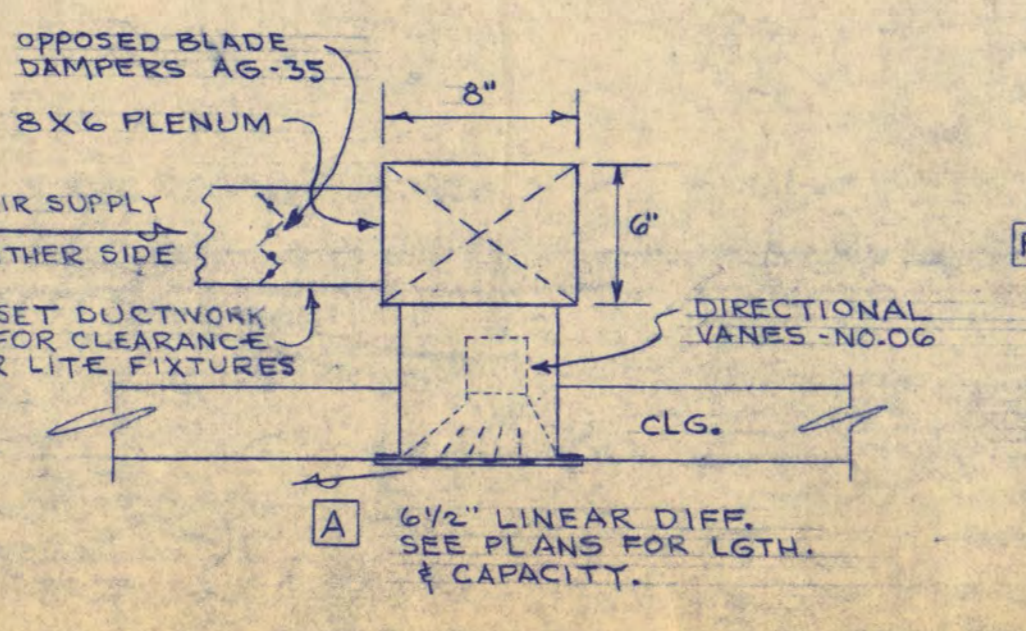
CORRIDOR RM. 143 - RET. AIR TRANS. GR'S. NO SCALE



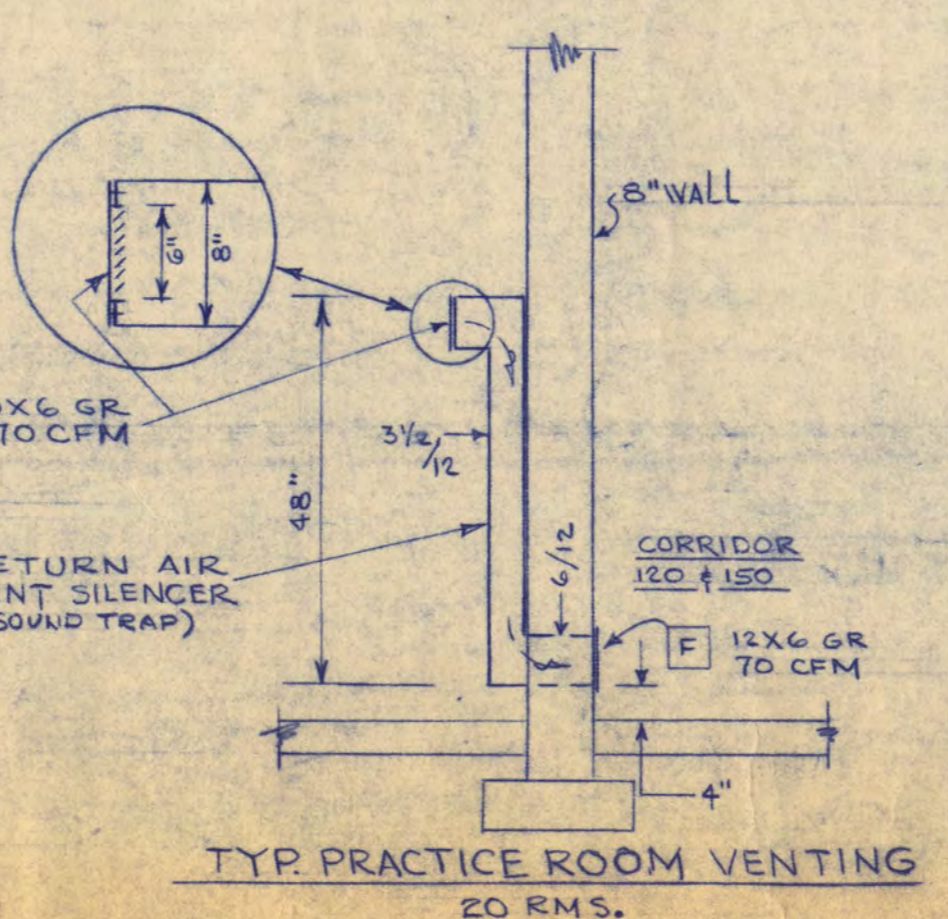
TYPICAL DUCT CONNECTIONS



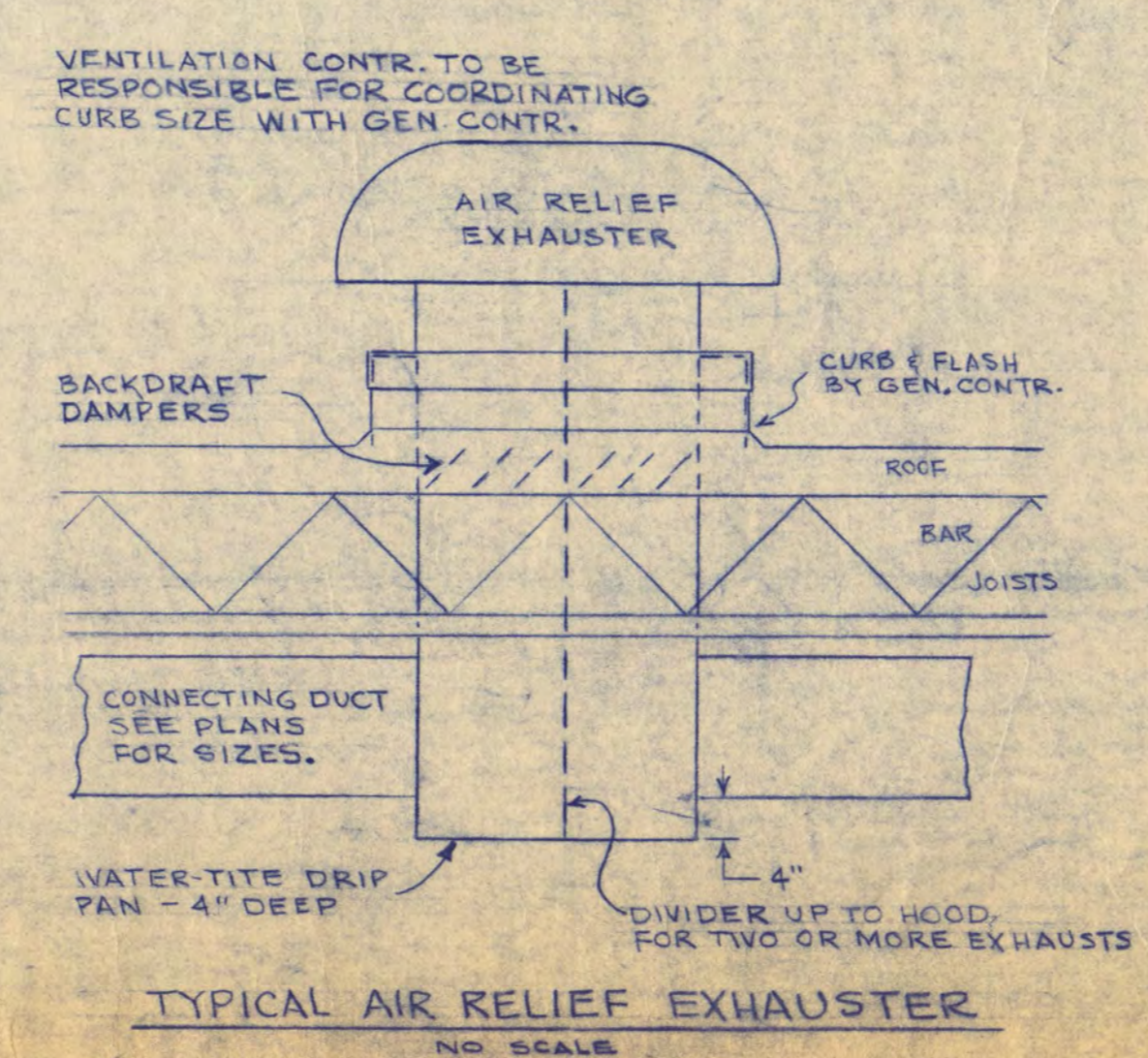
TYPICAL DUCT SLEEVING THRU WALLS NO SCALE



TYP. LINEAR DIFFUSER INSTALLATION SCALE 3/4\"/>



TYP. PRACTICE ROOM VENTING 20 RMS. NO SCALE



TYPICAL AIR RELIEF EXHAUSTER NO SCALE

**WALTER BUTLER COMPANY**  
**HAARSTICK LUNDGREN AND ASSOCIATES INC.**  
 ARCHITECTS ST. PAUL ENGINEERS MINN.

**FINE ARTS BUILDING**  
 ST. CLOUD STATE COLLEGE  
 ST. CLOUD, MINNESOTA

DEPARTMENT OF ADMINISTRATION - STATE OF MINNESOTA  
 A. J. NELSON STATE ARCHITECT

STATE PROJECT NO. **3750**  
 COMAL NO. **6401**

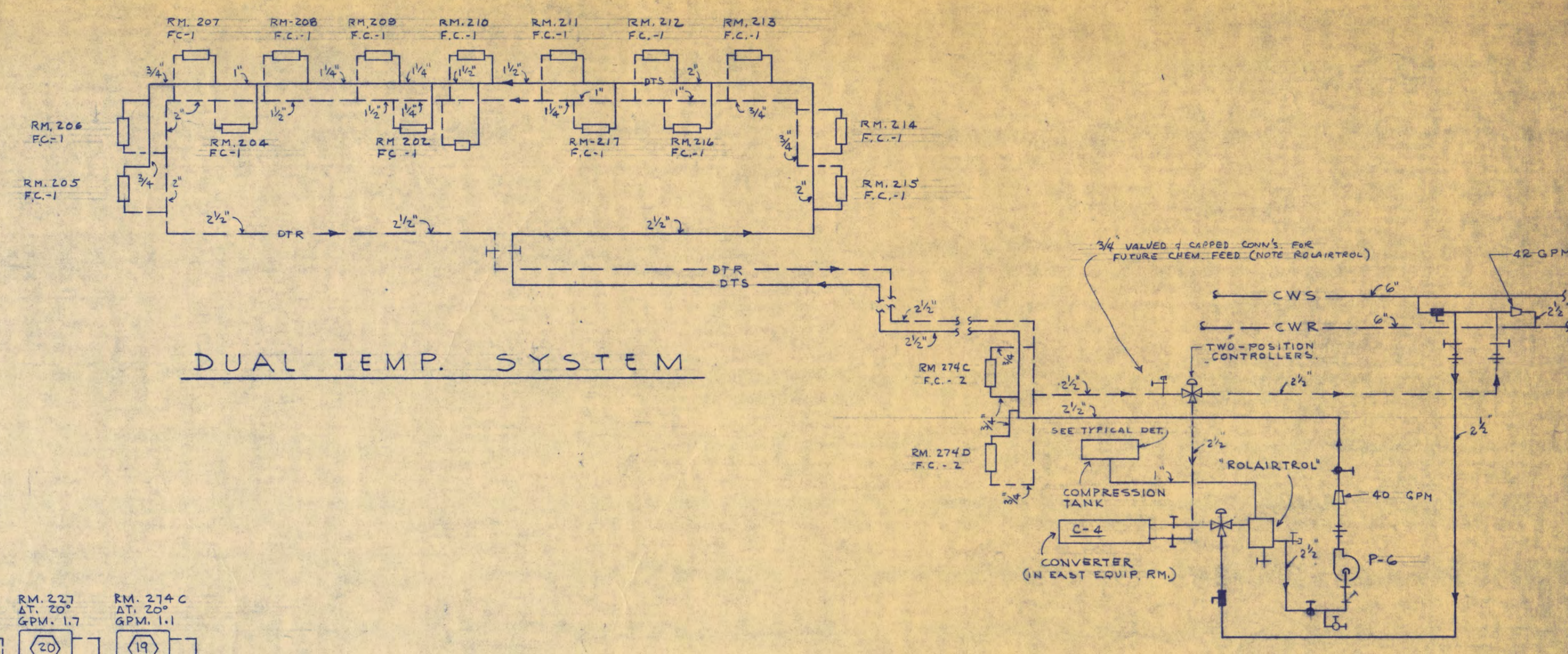
APPROVED BY: \_\_\_\_\_ PRESIDENT, ST. CLOUD STATE COLLEGE  
 APPROVED BY: \_\_\_\_\_ EXECUTIVE DIRECTOR, STATE COLLEGE BOARD  
 APPROVED BY: \_\_\_\_\_ COMMISSIONER OF ADMINISTRATION (BY AUTHORIZED SIGNATURE)

DATE: **6/15/65**  
 DRAWN BY: **H.B.**  
 CHECKED BY: **G.J.N.**  
 SHEET NO. **M-9**

I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 REG. NO. \_\_\_\_\_

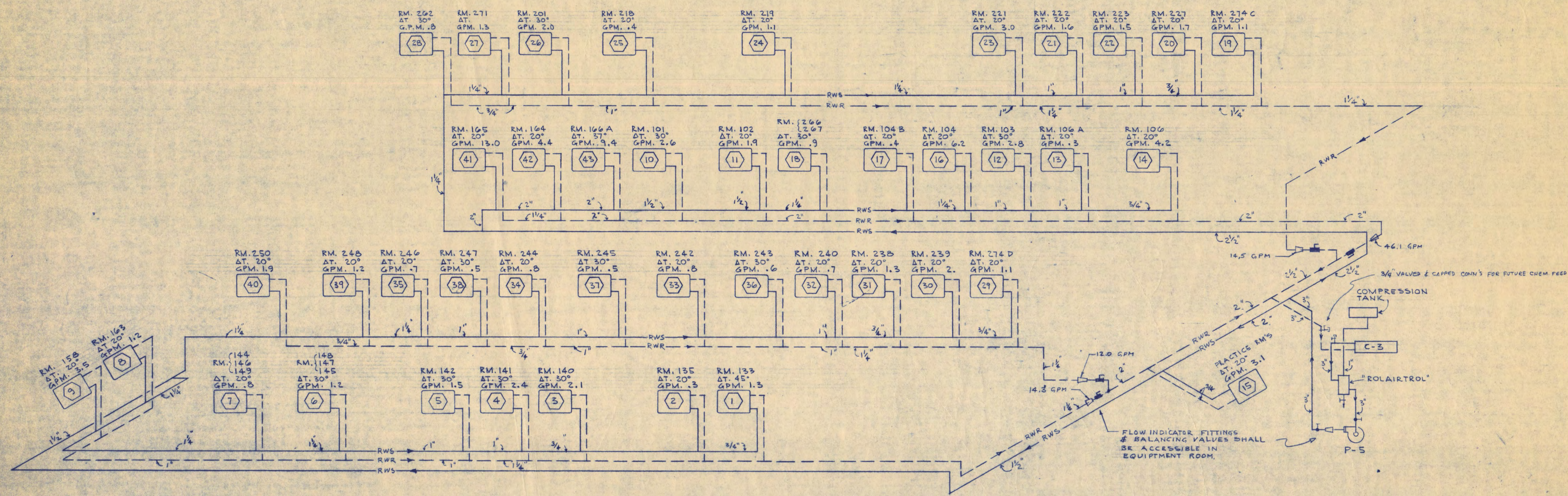
MECHANICAL  
 MECHANICAL DETAILS

REVISED: 7/16/66 OF 12 SHEETS

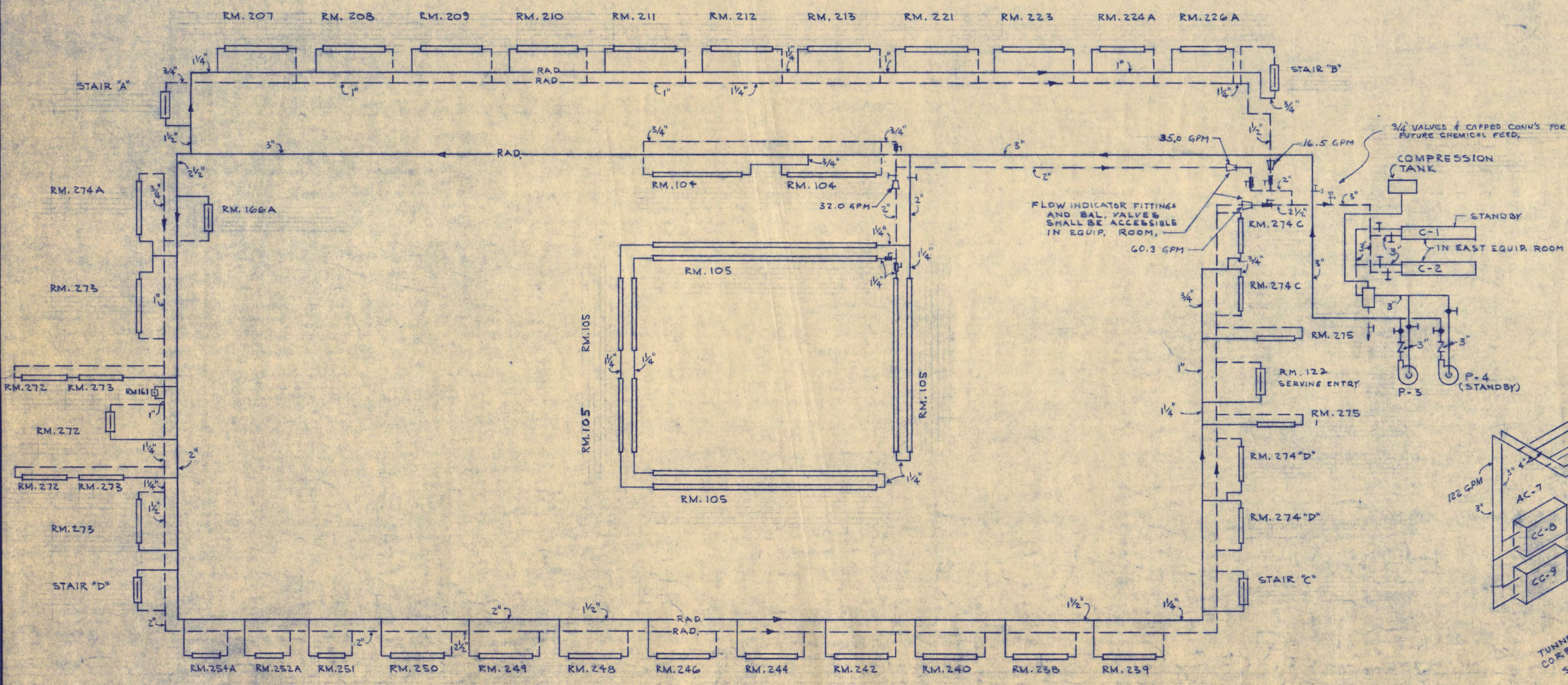


DUAL TEMP. SYSTEM

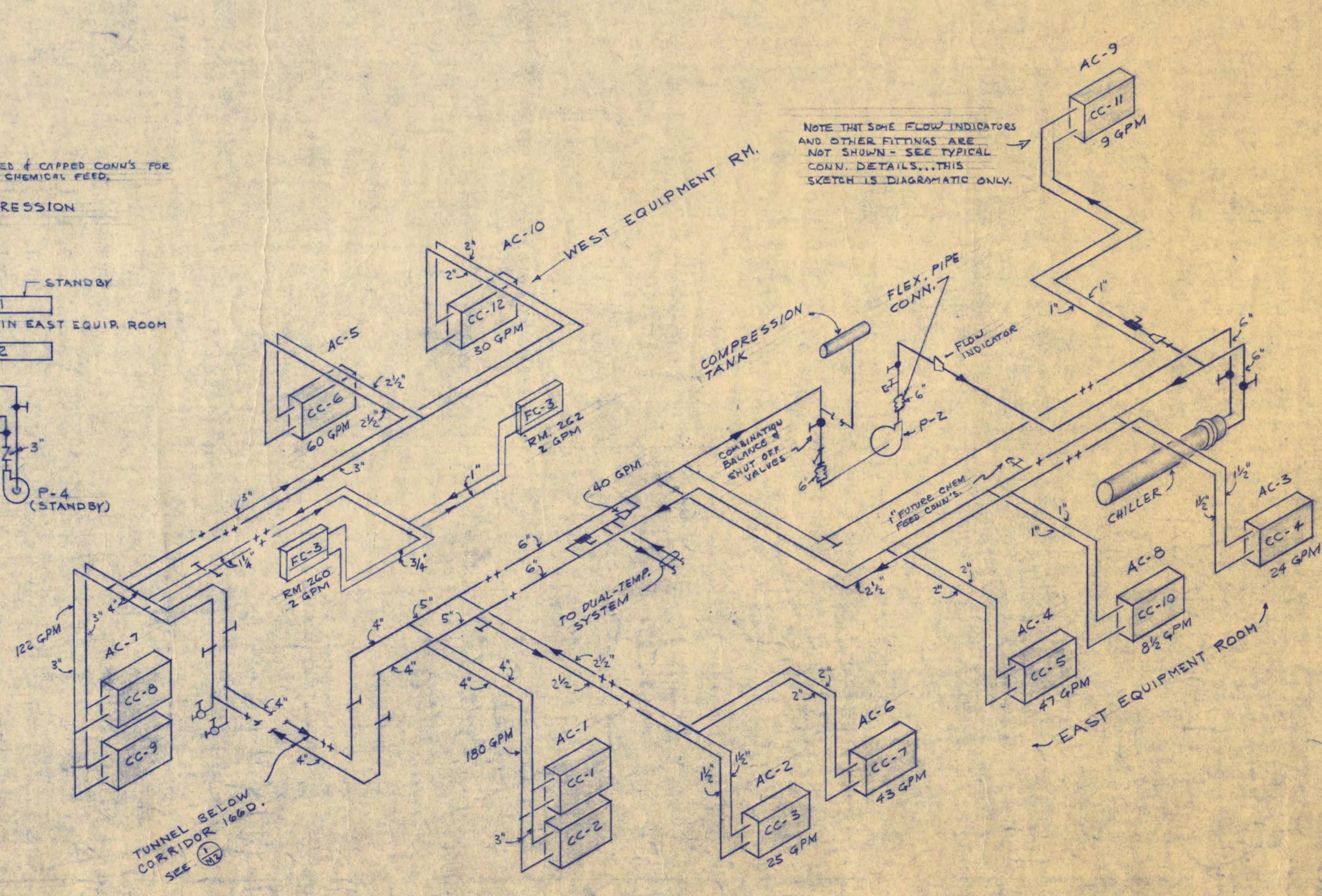
NOTES:  
 1. SEE M-9 FOR SYMBOLS.  
 2. SEE M-9 FOR TYPICAL CONNECTIONS AND FITTINGS AT COILS & EQUIPMENT.



REHEAT PIPING SYSTEM  
NO SCALE



RADIATION SYSTEM  
NO SCALE



CHILLED WATER SYSTEM  
NO SCALE

<b>WALTER BUTLER COMPANY</b> <b>HAARSTICK LUNDGREN AND ASSOCIATES INC.</b>	
ARCHITECTS ST. PAUL	ENGINEERS MINN.
<b>FINE ARTS BUILDING</b>	
ST. CLOUD STATE COLLEGE ST. CLOUD, MINNESOTA	
DEPARTMENT OF ADMINISTRATION - STATE OF MINNESOTA A. J. NELSON STATE ARCHITECT	
STATE PROJECT NO. <b>3750</b>	APPROVED BY: _____ PRESIDENT, ST. CLOUD STATE COLLEGE
COMM. NO. <b>6401</b>	APPROVED BY: _____ EXECUTIVE DIRECTOR, STATE COLLEGE BOARD
DATE 6/15/65	APPROVED BY: _____ COMMISSIONER OF ADMINISTRATION (AN AUTHORIZED SIGNATURE)
DRAWN BY W. N. K. B.	I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
CHECKED BY C. J. M.	REQ. NO.
SHEET NO. <b>M-10</b>	MECHANICAL
REVISED: 5/11/66	PIPING SYSTEM DIAGRAMS

AIR CONDITIONING SYSTEMS

EXHAUST SYSTEMS

Main table for Air Conditioning Systems with columns for Fans, Filters, Cooling Coils, Heating Coils, and Remarks.

Table for Exhaust Systems with columns for Location, Service, C.F.M., S.P., Max. Outlet Vel., H.P., R.P.M., Control, and Remarks.

REGISTERS GRILLES DIFFUSERS

Table for Registers, Grilles, and Diffusers with columns for Mark, Style, Size, Service, Mounting, Location, and Remarks.

REHEAT COILS

Table for Reheat Coils with columns for Mark, Style, C.F.M., Face Dimensions, Ent. Air Temp., Leaving Air Temp., G.P.M., Max. Water Press. Drop, and Remarks.

FAN COIL UNITS

Table for Fan Coil Units with columns for Mark, Style, C.F.M., S.H., Total Heat, Htg. Capacity, G.P.M., Max. Water Press. Drop, and Remarks.

PUMPS

Table for Pumps with columns for Mark, Style, Location, Service, G.P.M., Total Head, Suction Size, Discharge Size, Min. Eff., HP, P.P.M., Control, and Remarks.

RADIATION

Table for Radiation with columns for Mark, Style, Capacity, Element, Pipe, Fins, Mounting, and Remarks.

CONVERTERS

Table for Converters with columns for Mark, Style, Location, Service, G.P.M., No. Passes, Max. Water Press. Drop, Supply Temp., Leaving Temp., Supply Steam Pressure, Heating Surface, and Remarks.

UNIT HEATERS

Table for Unit Heaters with columns for Mark, Style, Capacity, G.P.M., Max. Water Press. Drop, C.F.M., Motor Data, Control, Remarks, and Location.

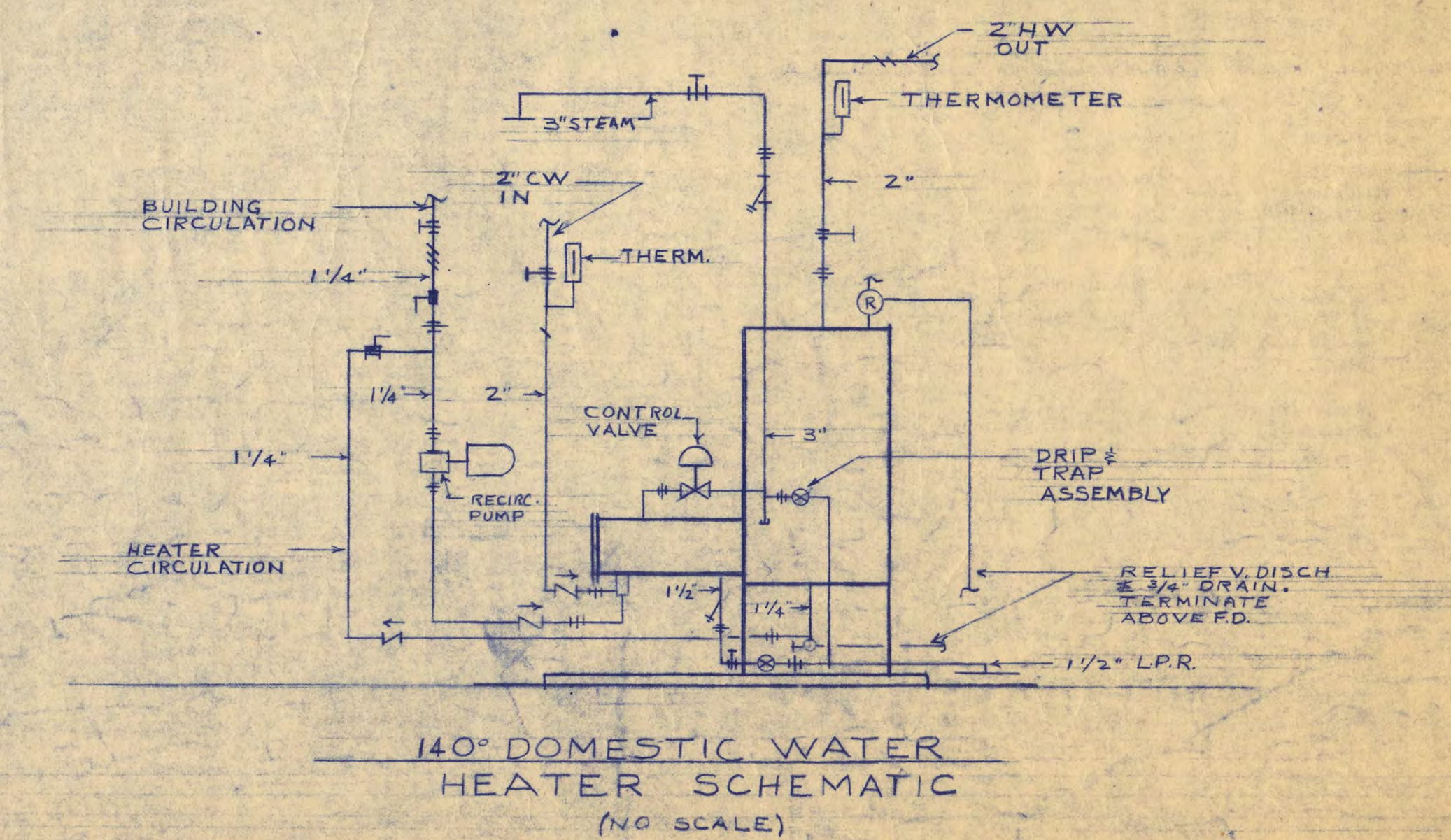
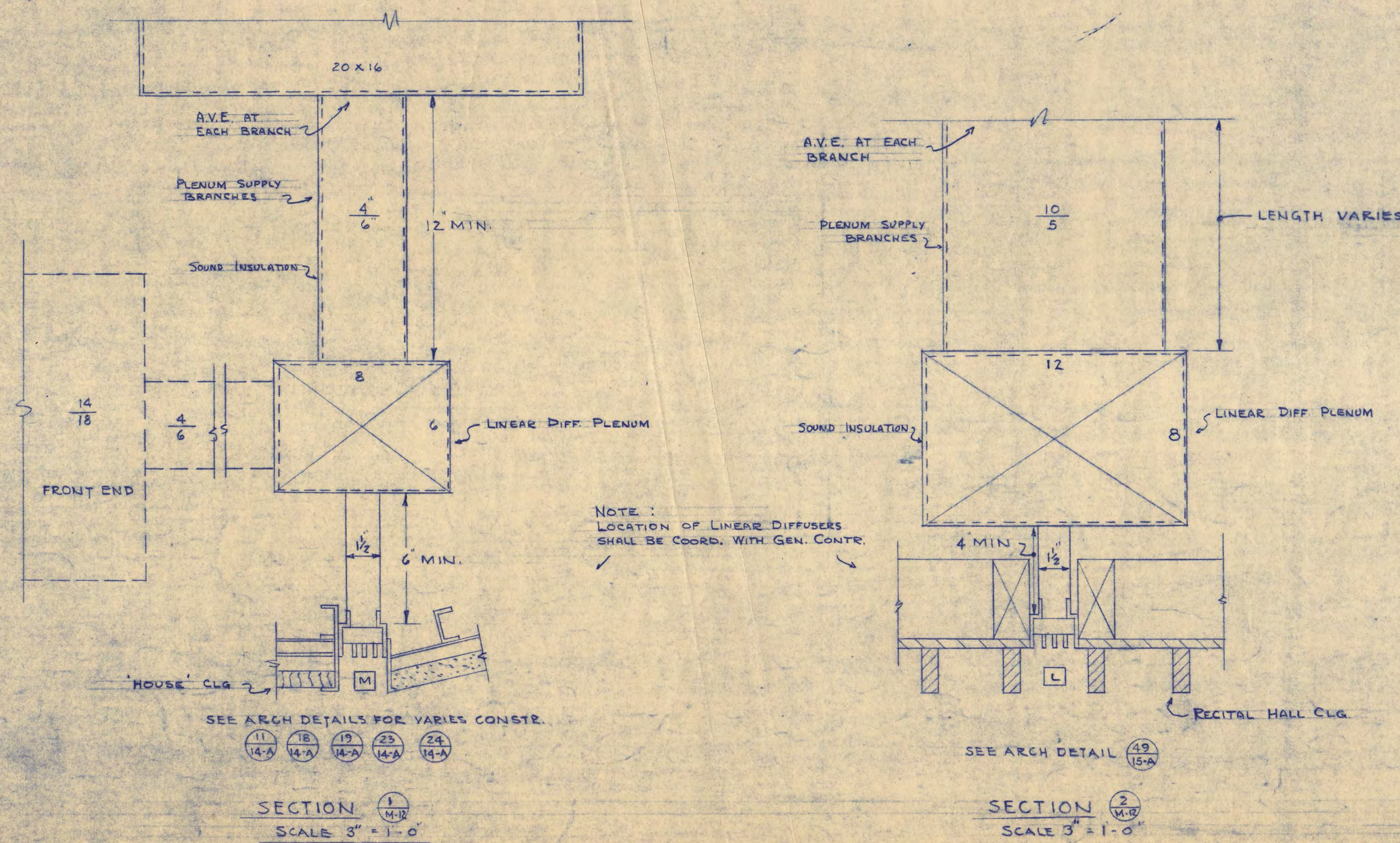
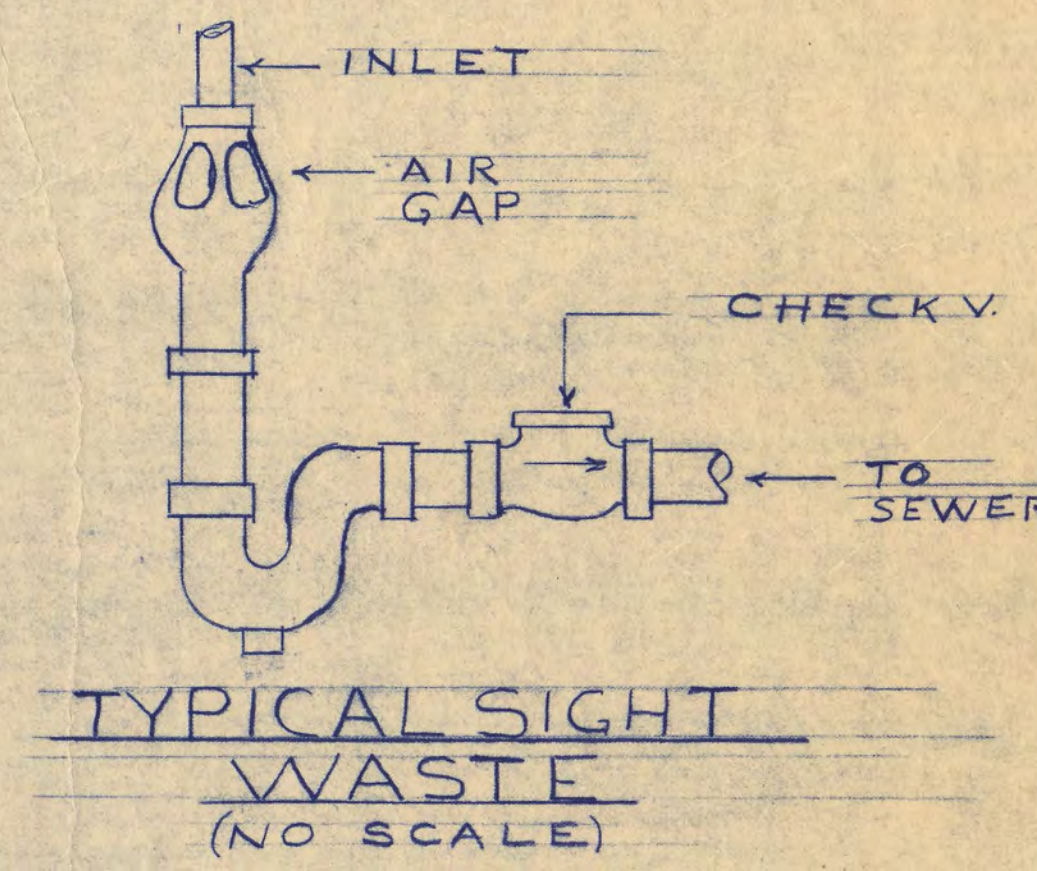
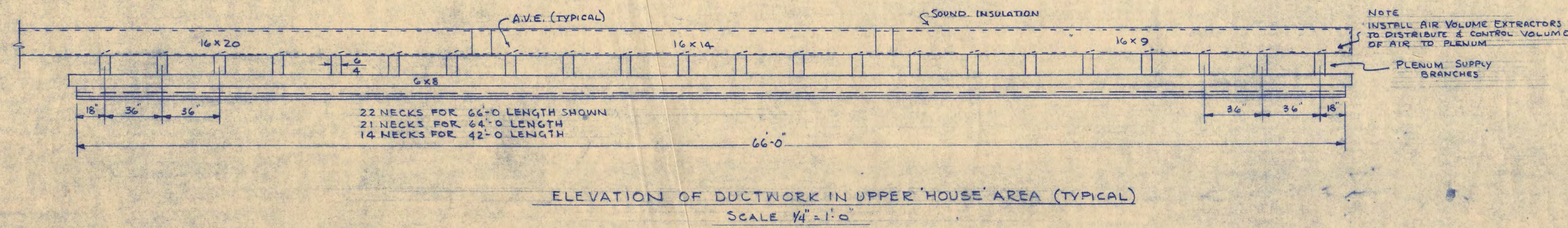
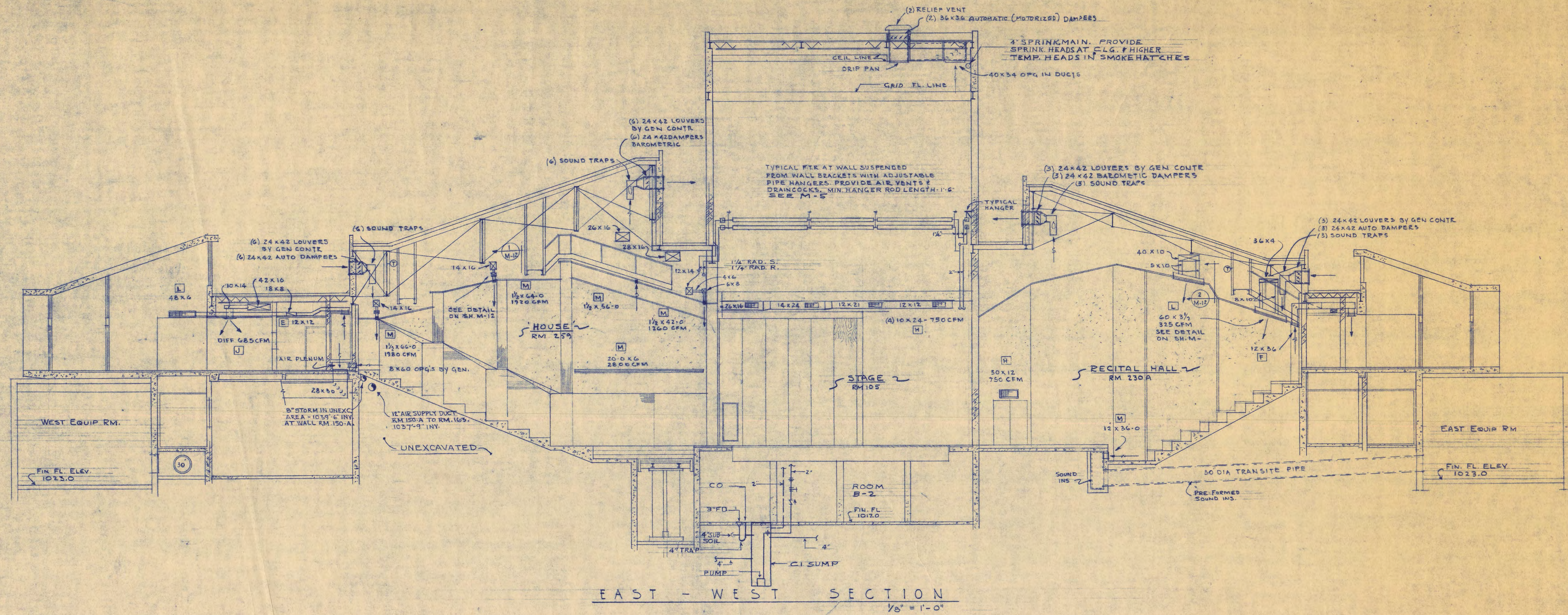
FRESH AIR PREHEAT UNITS

Table for Fresh Air Preheat Units with columns for Mark, C.F.M., Location, Max. Face Vel., Ent. Temp., Leav. Temp., Press., LBS./HR., Length, Height, and Remarks.

HEATING PIPING SYSTEMS RUNOUT SIZES (INCLUDING CONVERTERS, RADIATION, & UNIT HEATERS)

CONVERTERS table with columns for Style, Capacity, G.P.M., MFR. NO., Size, Location.

WALTER BUTLER COMPANY HAARSTICK LUNDGREN AND ASSOCIATES INC. FINE ARTS BUILDING ST. CLOUD STATE COLLEGE ST. CLOUD, MINNESOTA



<b>WALTER BUTLER COMPANY</b>	
<b>HAARSTICK LUNDGREN AND ASSOCIATES INC.</b>	
ARCHITECTS ST. PAUL	ENGINEERS MINN.
<b>FINE ARTS BUILDING</b>	
ST. CLOUD STATE COLLEGE ST. CLOUD, MINNESOTA	
DEPARTMENT OF ADMINISTRATION - STATE OF MINNESOTA ST. PAUL, MINNESOTA	
A. J. NELSON	STATE ARCHITECT
STATE PROJECT NO. <b>3750</b>	APPROVED BY: PRESIDENT, ST. CLOUD STATE COLLEGE
CONTRACT NO. <b>6401</b>	APPROVED BY: EXECUTIVE DIRECTOR, STATE COLLEGE BOARD
DATE 6/15/45	APPROVED BY: COMMISSIONER OF ADMINISTRATION BY AUTHORIZED SIGNATURE
DRAWN BY J.E. V.N.	I HEREBY CERTIFY THAT THIS DRAWING WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA
CHECKED BY A.J.N.	REG. NO.
SHEET NO. <b>M-12</b>	MECHANICAL
REVISED 5/15/48	MECHANICAL DETAILS