

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION	ABBREV.
----	EXISTING WORK TO REMAIN	
	NEW WORK	
12 X 9 / 12 X 9	DUCT SIZE, FIRST FIGURE IS SIDE SHOWN	
R / D	CHANGE OF ELEVATION (R) RISE (D) DROP	
AD	ACCESS DOORS VERTICAL OR HORIZONTAL	AD
▭	RECTANGULAR POSITIVE PRESSURE DUCT IN SECTION OR GOING UP	
▭	RECTANGULAR NEGATIVE PRESSURE DUCT IN SECTION OR GOING UP	
▭	RECTANGULAR POSITIVE PRESSURE DUCT GOING DOWN	
▭	RECTANGULAR NEGATIVE PRESSURE DUCT GOING DOWN	
S	SPLITTER WITH MANUAL DAMPER	S
R	STANDARD DUCT BRANCH SUPPLY OR RETURN, WITH VOLUME DAMPER	
T	TRANSITION	
V	TURNING VANES	
B	BELL MOUTH FITTING, WITH VOLUME DAMPER	
W	DUCT BRANCH BOTTOM CONNECTION W/VOLUME DAMPER	
L	ACOUSTICAL LINING	
G	SUPPLY GRILLE OR REGISTER	SG, SR
R	RETURN OR EXHAUST GRILLE OR REGISTER	RG, RR, EG, ER
TA	TRANSFER GRILLE ASSEMBLY	TG
VD	MANUAL VOLUME DAMPER	FD & AD
APBD	AUTOMATIC PARALLEL BLADE DAMPER	VD
AOBD	AUTOMATIC OPPOSED BLADE DAMPER	APBD
FC	DUCT FLEXIBLE CONNECTION	AOBD
F	CENTRIFUGAL FAN OR BASE MOUNTED PUMP	FC
F	WALL MOUNTED EXHAUST PROPELLER TYPE FAN	F
F	INLINE FAN	F
UH	UNIT HEATER	
CHSR ##	CHILLED WATER SUPPLY/RETURN RISER NUMBER	
HWSR ##	HOT WATER SUPPLY/RETURN RISER NUMBER	
CD ##	CONDENSATE RISER NUMBER	
SA ##	SUPPLY AIR RISER NUMBER	
EA ##	EXHAUST AIR RISER NUMBER	
I	SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION	
R	RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.	
V	VOLUME DAMPER	
FD	FIRE DAMPER	
X7	INDICATES DETAIL/ LOCATION NUMBER	
X1.1	INDICATES DRAWING TO REFERENCE	

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION	ABBREV.
CHS	CHILLED WATER SUPPLY	
CHR	CHILLED WATER RETURN	
HWS	HOT WATER SUPPLY	
HWR	HOT WATER RETURN	
CD	CONDENSATE DRAIN	
MU	MAKE-UP (WATER)	
LPG	LOW PRESSURE GAS	
BBD	BOILER BLOW-OFF	
G	GATE VALVE	
G	GATE VALVE ON VERTICAL	
G	GLOBE VALVE	
B	BALL VALVE	
C	CHECK VALVE	
T	THREE-WAY CONTROL VALVE	
2	TWO-WAY CONTROL VALVE	
P	PRESSURE REDUCING VALVE	
R	PRESSURE REGULATOR	
S	STRAINER	
G	GAS COCK	
P	PLUG VALVE	
B	CALIBRATED BALANCING VALVE WITH MEMORY STOP	
T	TRIPLE DUTY VALVE	
R	RELIEF VALVE	
F	FLOW SWITCH	
E	45° ELBOW UP	
D	45° ELBOW DOWN	
E	90° ELBOW UP	
D	90° ELBOW DOWN	
CB	BRANCH CONNECTION OUT OF BOTTOM	
CT	BRANCH CONNECTION TOP TAKE OFF	
P	PIPE CAP	
F	FLANGES	
U	UNION	
FD	FLOOR DRAIN	FD
W	PRESSURE OR THERMOMETER WELL	
TM	THERMOMETER	
P	PIPE IN CROSS SECTION	
P	PRESSURE GAUGE	
PC	PRESSURE GAUGE WITH GAUGE COCK	
FA	FLOW IN DIRECTION OF ARROW	
P	PIPE ANCHOR	
R	CONCENTRIC REDUCER	
E	ECCENTRIC REDUCER	
I	IN-LINE PUMP	
T	THERMOSTAT	T
DD	DUCT SMOKE DETECTOR	
1	INDICATES PLAN NOTE NO.1	
CE	CONNECT TO EXISTING	
AD	ACCESS DOOR	AD
AF	ABOVE FINISHED FLOOR	AF
ACU	AIR CONDITIONING UNIT	ACU
AP	ACCESS PANEL	AP
AS	AIR SEPARATOR	AS
A	AMPERES	AMPS
A	AND	&
A	AT	@
BTU	BRITISH THERMAL UNITS PER HOUR	BTUH
BHP	BRAKE HORSE POWER	BHP
CLG	CEILING	CLG
CD	CEILING DIFFUSER	CD
CR	CEILING REGISTER	CR
CT	COMPRESSION TANK	CT
CFM	CUBIC FEET PER MINUTE	CFM
CFH	CUBIC FEET PER HOUR	CFH
DCW	DOMESTIC COLD WATER	DCW
DEG	DEGREE FARENHEIT	DEG F
DTL	DETAIL	DTL
DB	DECIBELS	DB
DWG	DRAWING	DWG

ABBREVIATIONS CON.

ABBREV.	DESCRIPTION	ABBREV.
HPWS	DRY BULB TEMPERATURE	DBT
HPWR	DIAMETER	Ø
CWS	DOMESTIC	DOM
CWR	ENERGY RECOVERY UNIT	ERU
CD	ENTERING	ENT
MU	EXTERNAL STATIC PRESSURE	ESP
LPG	ENTERING AIR TEMPERATURE	EAT
BBD	ENTERING WATER TEMPERATURE	EWT
	EXISTING	(E)
	EXHAUST	EXH.
	EXHAUST FAN	EF
	EXTERNAL	EXT
	FAN	F
	FLOOR	FLR
	FEET	FT
	FEET OF WATER HEAD	FT.WG
	FEET PER SECOND	FPS
	FEET PER MINUTE	FPM
	FULL LOAD AMPS	FLA
	GALLONS PER MINUTE	GPM
	HEAT EXCHANGER	HX
	HERTZ	HZ
	HORSEPOWER	HP
	HOT WATER	HW
	INCH	IN
	LEAVING AIR TEMPERATURE	LAT
	LEAVING WATER TEMPERATURE	LWT
	LOUVER	LOUVER
	MAXIMUM	MAX
	MINIMUM	MIN
	MINIMUM CIRCUIT AMPACITY	MCA
	THOUSAND OF BTUH	MBH
	NOISE CRITERIA	N.C.
	NORMALLY CLOSED	NC
	NORMALLY OPEN	NO
	NUMBER	NO. OR No.
	OUTSIDE AIR	OA
	OPPOSED BLADE VOLUME DAMPER	OBVD
	PERCENT	%
	PHASE	PH
	POUNDS	LBS
	PRESSURE DROP	PD
	PRESSURE REDUCING VALVE	PRV
	POUNDS PER SQUARE INCH	PSI
	POUNDS PER SQUARE INCH GAUGE	PSIG
	PUMP	P
	POWER ROOF VENTILATOR	PV
	ROOM CRITERIA	RC
	REVOLUTIONS PER MINUTE	RPM
	RELATIVE HUMIDITY	RH
	ROOF	RF
	SENSIBLE HEAT	SH
	STATIC PRESSURE	SP
	SQUARE FEET	SQ. FT
	SURFACE	SURF
	SUPPLY AIR	SA
	TOTAL PRESSURE	TP
	TEMPERATURE DIFFERENCE	TD
	TOTAL DYNAMIC HEAD	TDH
	TYPICAL	TYP
	VENT	VT
	VOLTS	V
	WEIGHT	WT
	WET BULB TEMPERATURE	WBT
AD		
AFF		
ACU		
AP		
AS		
AMPS		
&		
@		
BTUH		
BHP		
CLG		
CD		
CR		
CT		
CFM		
CFH		
DCW		
DEG F		
DTL		
DB		
DWG		

MECHANICAL GENERAL NOTES

- WORK SHOWN ON DRAWINGS IS NEW UNLESS OTHERWISE INDICATED.
- FOR PROJECT GENERAL NOTES AND REFERENCE SYMBOLS, SEE DWG. CS-1.
- FOR CONSTRUCTION (COMPOSITION) OF FLOORS, WALLS, PARTITIONS, CEILING, AND ROOF, SEE ARCHITECTURAL DRAWINGS.
- DO NOT ORDER EQUIPMENT OR BEGIN FABRICATION OF PARTS PRIOR SHOP DRAWING ACCEPTANCE.
- INSTALL EQUIPMENT AND COMPONENTS TO ALLOW ACCESS FOR MAINTENANCE AND REPLACEMENT.
- EQUIPMENT CAPACITY AND MATERIAL SIZES INDICATED ON PLANS ARE MINIMUM PROJECT REQUIREMENT. THE CONTRACTOR SHALL OBTAIN EXACT REQUIREMENTS FOR EQUIPMENT CONNECTIONS, OTHER REQUIRED SERVICES AND CLEARANCES PER MANUFACTURER RECOMMENDATION.
- FOR ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT, SEE ELECTRICAL DRAWINGS.
- DRAWINGS DO NOT SHOW ALL CONSTRUCTION AND FABRICATION DETAILS, HOWEVER, ALL SUCH WORKS ARE REQUIRED AND SHALL BE PROVIDED TO COMPLETE THE INSTALLATION AT NO ADDITIONAL COST TO THE OWNER.
- FABRICATE DUCTWORK AS NOTED AND SPECIFIED. DUCT PRESSURE CLASSIFICATION AND DUCT SEAL CLASS SHALL BE IN ACCORDANCE WITH DUCT PRESSURE CLASSIFICATION AND DUCT SEAL CLASS SCHEDULE SHOWN ON DWG. M-xx.
- AIR SYSTEMS AS A WHOLE AND EACH COMPONENT SHALL BE SELECTED TO DELIVER SOUND LEVELS (ASHRAE NC) NOT TO EXCEED:

OFFICES	35
LOBBY AND TOILET	40
CONFERENCE AND EXECUTIVE ROOMS	30
DORMITORY SLEEPING AREAS	30
- BALANCE AIR AND WATER SYSTEMS.
- INSTALL PIPE SLEEVES FOR ALL PIPING PENETRATING STRUCTURAL WALLS AND FLOORS.
- PROVIDE FIRE-PROOFING FOR ALL PIPING AND DUCTWORK WHICH PENETRATES FIRE RATED CONSTRUCTION.

PROJECT RECORDS

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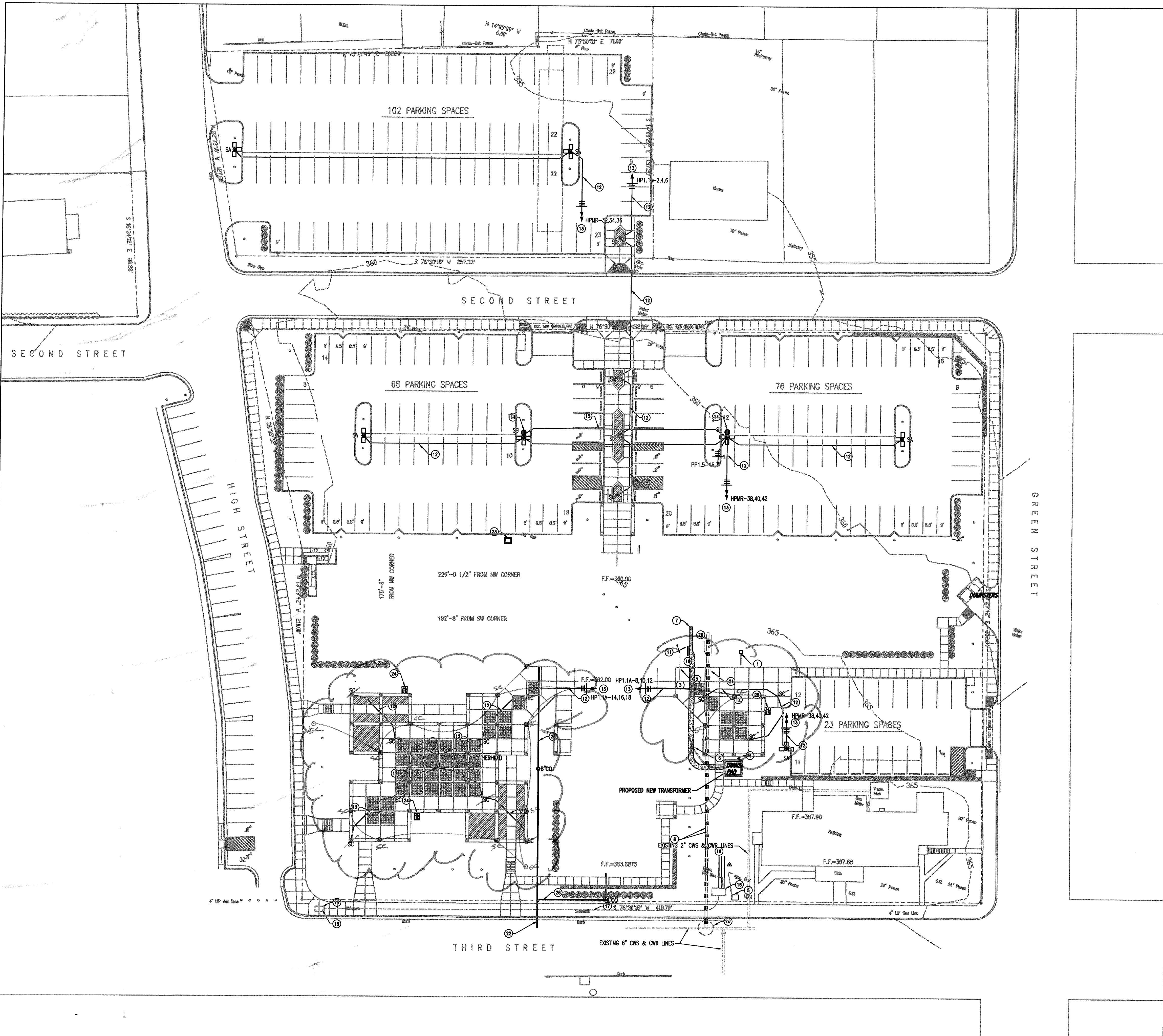
MARSHALL
 ENGINEERING
 CORPORATION
 12830 METROPLEX DR
 HOUSTON, TX 77066
 PHONE: (281) 962-4133
 FAX: (281) 962-4631
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Record Drawings

New Student Housing Project
 Blinn College
 Brenham, Texas

RECORD DRAWINGS
 8 / 27 / 11
 ISSUED FOR CONSTRUCTION
 8 / 10 / 10

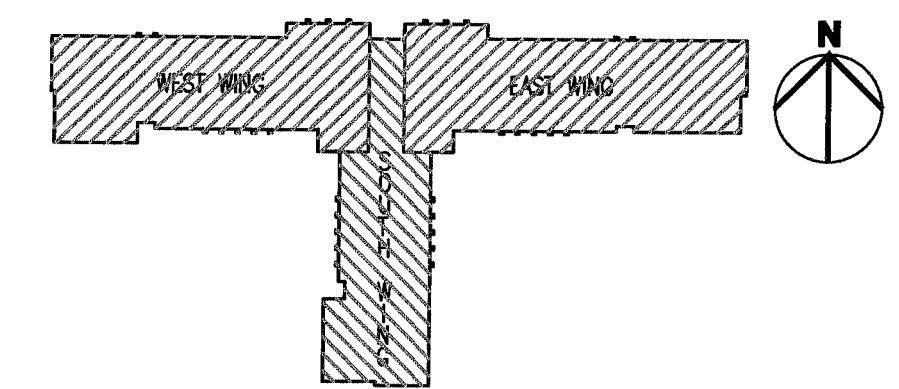
MO.1



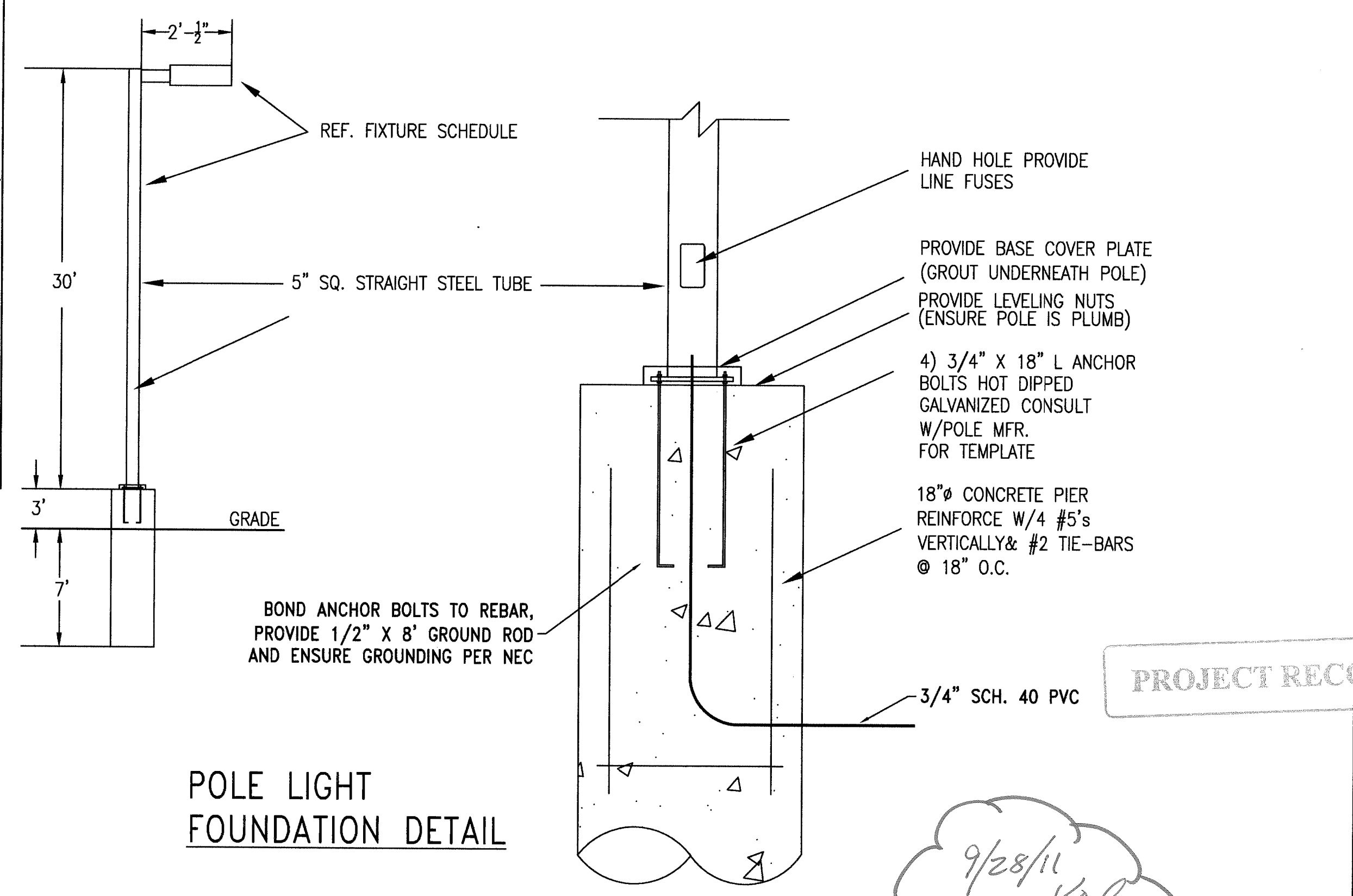
KEY NOTES

- 1 NEW NATURAL GAS METER. SEE PLUMBING DRAWINGS FOR SIZE AND RATING.
- 2 FIRE WATER MAIN. STUBB-UP IN SPRINKLER RISER ROOM. COORDINATE EXACT LOCATION AND ELEVATION WITH FOUNDATION PLAN.
- 3 FIRE WATER MAIN. STUBB-UP IN SPRINKLER RISER ROOM. COORDINATE EXACT LOCATION AND ELEVATION WITH FOUNDATION PLAN.
- 4 PROPOSED 12.5KV-480V PRIMARY TRANSFORMER. COORDINATE EXACT LOCATION WITH BRENHAM POWER COMPANY.
- 5 EXISTING UNDERGROUND HIGH VOLTAGE VAULT TO REMAIN AND BE REUSED.
- 6 CONCRETE ENCASED ELECTRICAL DUCT BANK. ROUTE AT 48" BELOW GRADE.
- 7 CONDUIT STUB-UP BELOW ELECTRICAL DISTRIBUTION EQUIPMENT. SEE DRAWING EP1.0 FOR CONTINUATION.
- 8 ROUTE CHR & CHS LINES BELOW CONDUIT. MAINTAIN 18" SEPARATION.
- 9 ROUTE CHR & CHS LINES BELOW CONDUIT. MAINTAIN 18" SEPARATION.
- 10 PROVIDE TAP AND VALVE TO EXISTING CHW&CHR IN STREET. REPAIR PAVEMENT AS REQUIRED TO MATCH EXISTING.
- 11 PROVIDE AND INSTALL 2-TWO 4" CONDUIT WITH PULL STRING. TERMINATE IN COMMUNICATIONS ROOM.
- 12 1" C, 2#10 CU, 1#12 G.
- 13 ROUTE TO LIGHTING CONTACTOR PANEL CONTROLLED BY 7-DAY SEASONAL CLOCK WITH BATTERY BACK-UP AND PHOTOCEL OVERRIDE.
- 14 120V, W.P., GFI RECEPTACLE IN BASE OF POLE.
- 15 1" C, 2#10 CU THWN, 1#12G
- 16 EXISTING COMMUNICATIONS PULL BOX.
- 17 EXISTING COMMUNICATIONS DUCT. FIELD VERIFY EXACT SIZE AND LOCATION. PROVIDE 12-PAIR, SINGLE MODE FIBER OPTIC CABLE.
- 18 TERMINATE NEW FIBER CABLE TO EXISTING CABLE CONNECTIONS. TEST AND CONFIRM CONNECTIVITY TO EXISTING BACKBONE NETWORK.
- 19 NEW 4" C WITH 12 PAIR, SINGLE MODE FIBER OPTIC WITHIN INTER-DUCT. PROVIDE EMPTY 4" CONDUIT WITH PULL STRING.
- 20 SEE SHEET M1.01 FOR CONTINUATION OF UTILITIES.
- 21 DOMESTIC WATER SERVICE. ROUTE TO DOMESTIC WATER METER. SEE CIVIL PLANS FOR CONTINUATION.
- 22 6" SANITARY SEWER PIPE. SEE CIVIL SITE PLANS FOR CONTINUATION.
- 23 NEW STORM DRAIN CATCH BASIN. SEE CIVIL PLANS FOR CONTINUATION.
- 24 PROVIDE WP/GFCI PROTECTED RECEPTACLE. ROUTE TO CIRCUIT PP1.5-17.
- 25 PROVIDE WP/GFCI PROTECTED RECEPTACLE. ROUTE TO CIRCUIT PP1.5-19.
- 26 PROVIDE 6" SANITARY SEWER PIPE.

KEY MAP



SYMBOL	SITE LIGHTING SCHEDULE
SA	LITHONIA KSF2 FCO M.H. 400W, 480V, 38,000 LUMEN LIGHTING FIXTURE WITH 3 LAMPS PER FIXTURE AND 30' MOUNTING POLE. FIXTURE WEIGHT IS 165 POUNDS.
SB	LITHONIA KSF2 FCO M.H. 400W, 480V, 38,000 LUMEN LIGHTING FIXTURE WITH 4 LAMPS PER FIXTURE AND 30' MOUNTING POLE. FIXTURE WEIGHT IS 110 POUNDS.
SC	LUMEC CAND2 - 150 WATT METAL HALIDE - RRS - 277V - FINISH (T.B.D.)
SD	

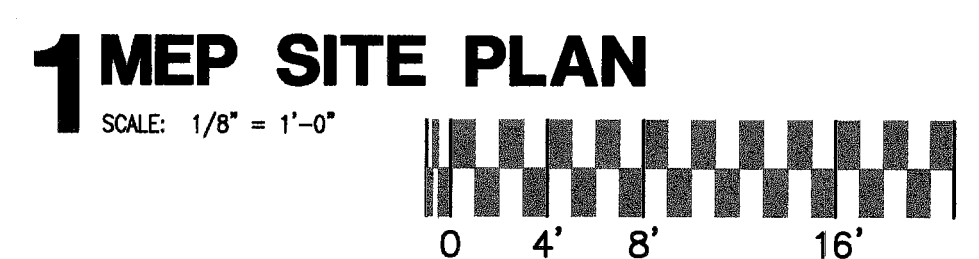


POLE LIGHT FOUNDATION DETAIL

PROJECT RECORDS

9/28/11
James K. Kib
Brandt

MEP SITE PLAN
Scale As Indicated



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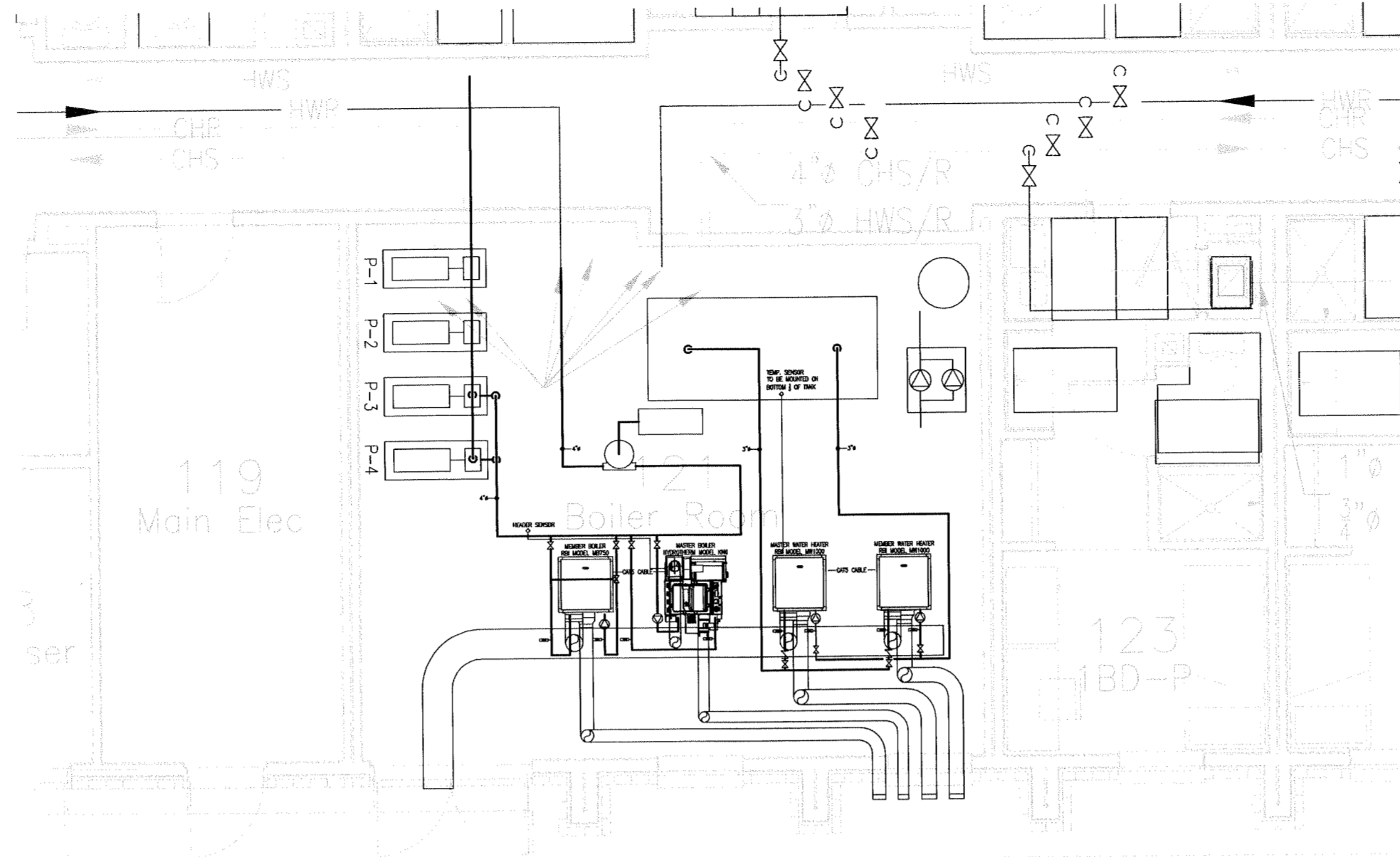
ISSUED FOR CONSTRUCTION
 8 / 10 / 10
 ADDENDUM #5
 1/22/10

MECHANICAL LEGEND

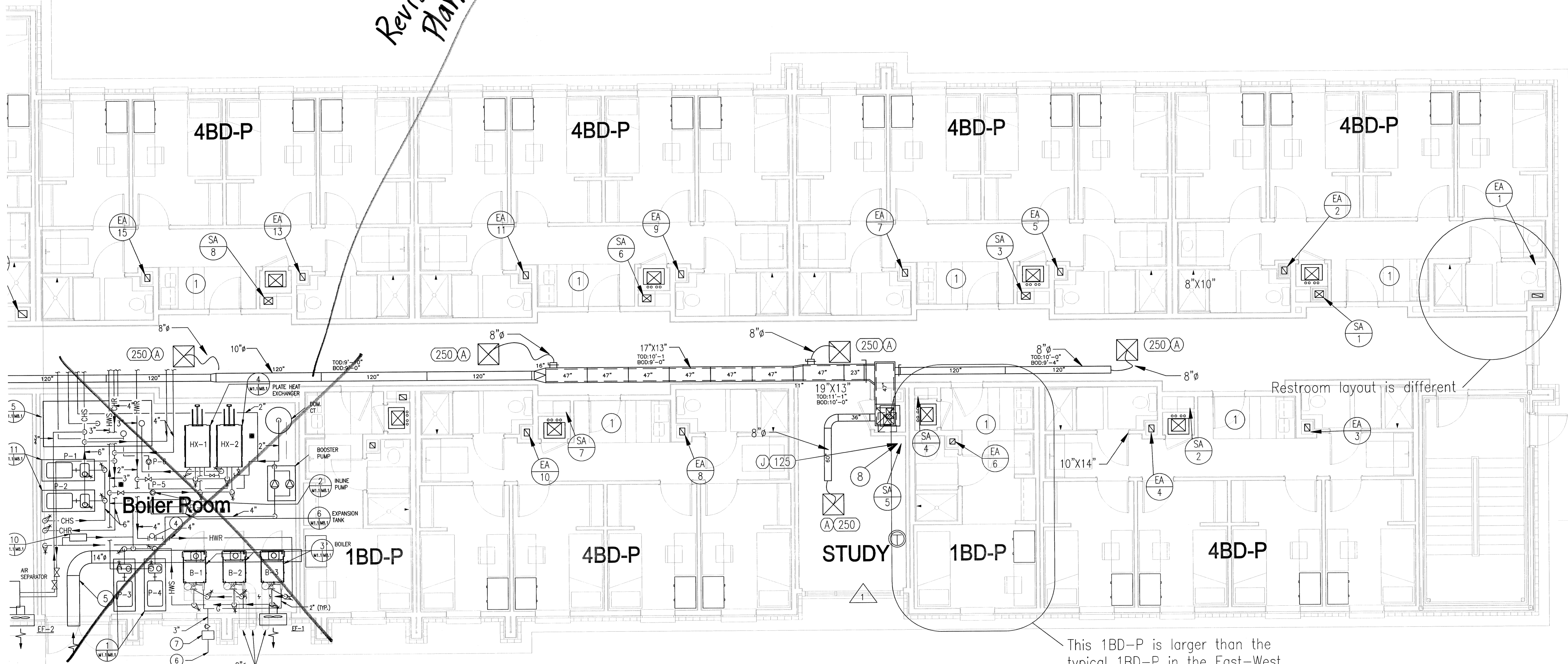
- TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION
- TURNING VANES
- DUCT TRANSITION
- RETURN DUCT W/ SMOKE/FIRE DAMPER
- (X7) INDICATES DETAIL/ LOCATION NUMBER
- (X1) INDICATES DRAWING TO REFERENCE

MECH. KEY NOTES

- 1 SEE SHEET M4.0 FOR DUCTWORK SIZES AND AIR FLOW IN THIS AREA.
- 2 RS AND RL PIPING UNDERGROUND TO CONDENSING UNIT.
- 3 ROUTE CONDENSATE PIPING TO FLOOR DRAIN.
- 4 AIR SEPARATOR. SEE DETAIL.
- 5 14" COMBUSTION AIR DUCT. CONNECT TO EACH BOILER VIA A 8" DUCT.
- 6 UNDERGROUND GAS SERVICE FROM UTILITY.
- 7 GAS PRESSURE REGULATOR.
- 8 PROVIDE FIRE DAMPER AT FIRE PARTITION FROM ABOVE. INSTALL SUPPLY AIR REGISTER IN LAY IN CEILING.
- 9 PROVIDE TEMPERATURE SENSOR IN RETURN AIR DUCT.



Revised Plan →



FOR DETAIL OF WORK IN THIS AREA SEE BOILER ROOM PLAN ON DWG. M1.2

This 1BD-P is larger than the typical 1BD-P in the East-West direction.

Restroom layout is different

PROJECT RECORDS

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Texas
Brenham, Texas

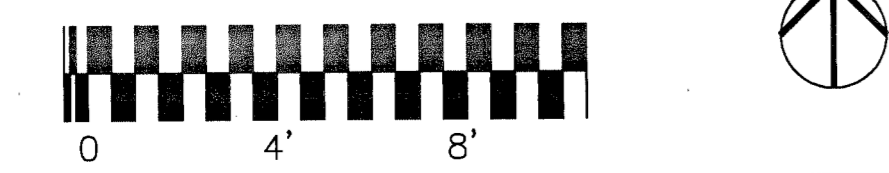
Record Drawings

Eagle Contracting
AS BUILT

DATE	REV.
2/3/11	SHOP DRAWING

M1.1

Mechanical Plan - East Wing



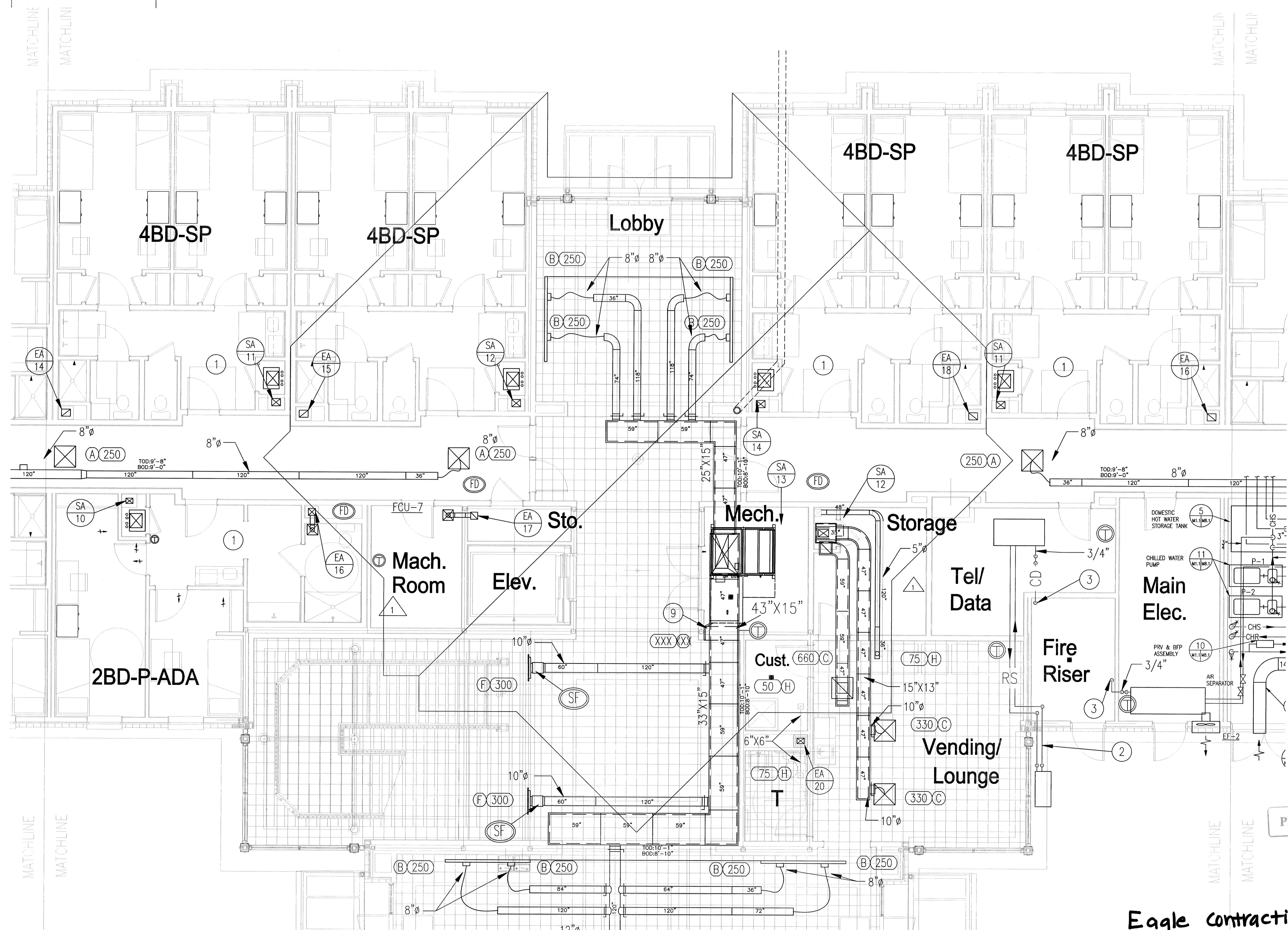
Mechanical First Floor Plan - East Wings

MECHANICAL LEGEND

- ⊕ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- ⊞ SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION.
- ⊞ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
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- ⊞ RETURN DUCT W/ SMOKE/FIRE DAMPER
- ⊞ VOLUME DAMPER
- ⊞ FIRE DAMPER
- ⊞ SMOKE/FIRE DAMPER
- ⊞ BACKDRAFT DAMPER
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- X1.1.1 INDICATES DRAWING TO REFERENCE

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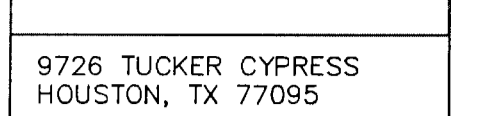
1 Mechanical Plan - West/East Wing
SCALE: 1/4" = 1'-0"



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Mechanical First Floor Plan - West/East Wings M1.2

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Blinn College
Brenham, Texas

Record Drawings

PROJECT RECORDS

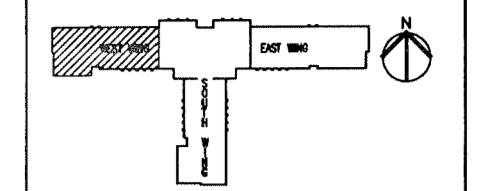
DATE REV. 2/7/11 SHOP DRAWING

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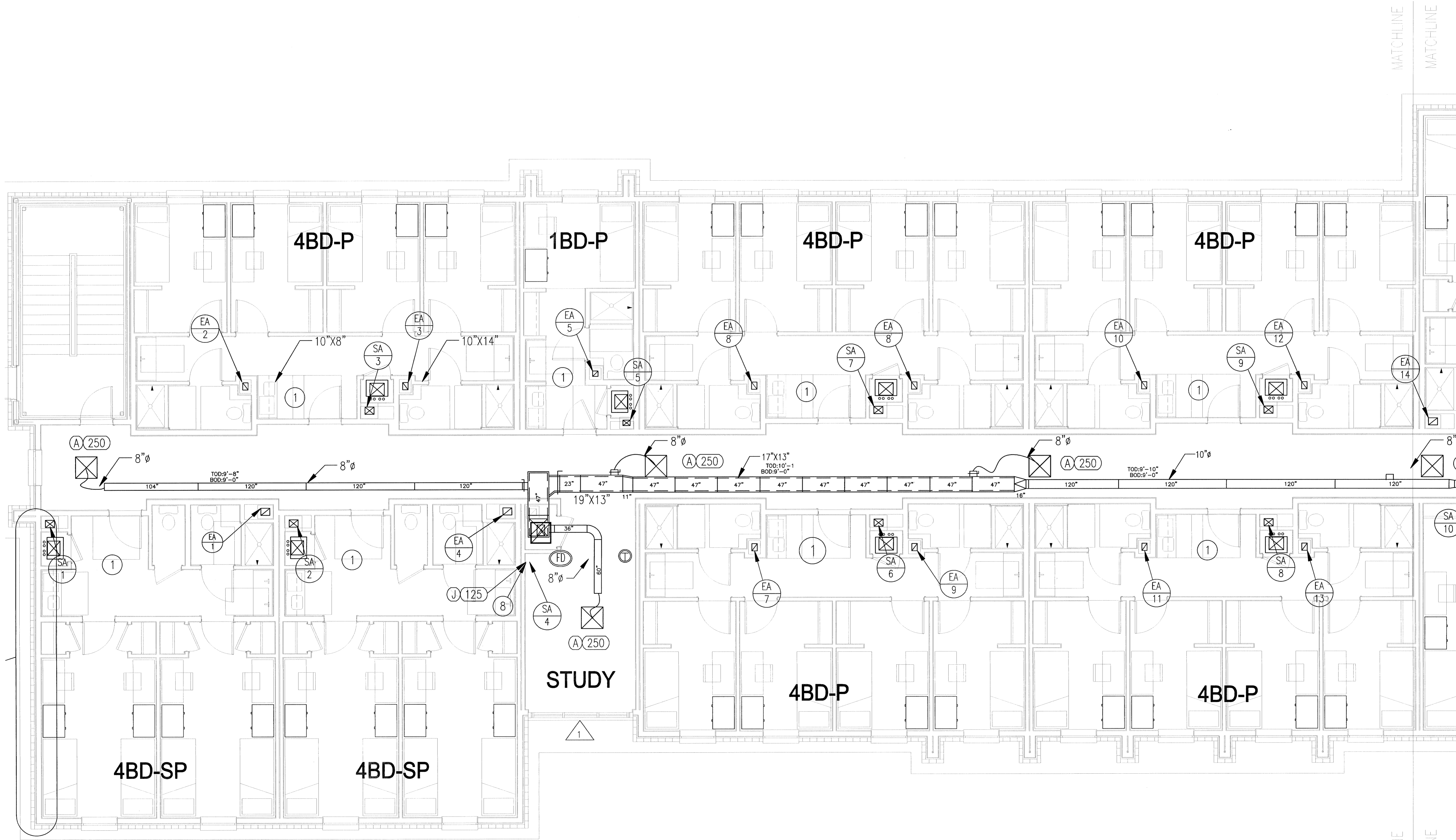
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Brenham, Texas

PROJECT RECORD	
DATE	REV.
2/7/11	SHOP DRAWING



Mechanical Plan – West Wing
SCALE: 1/4" = 1'-0"
0 4 8

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AS BUILT

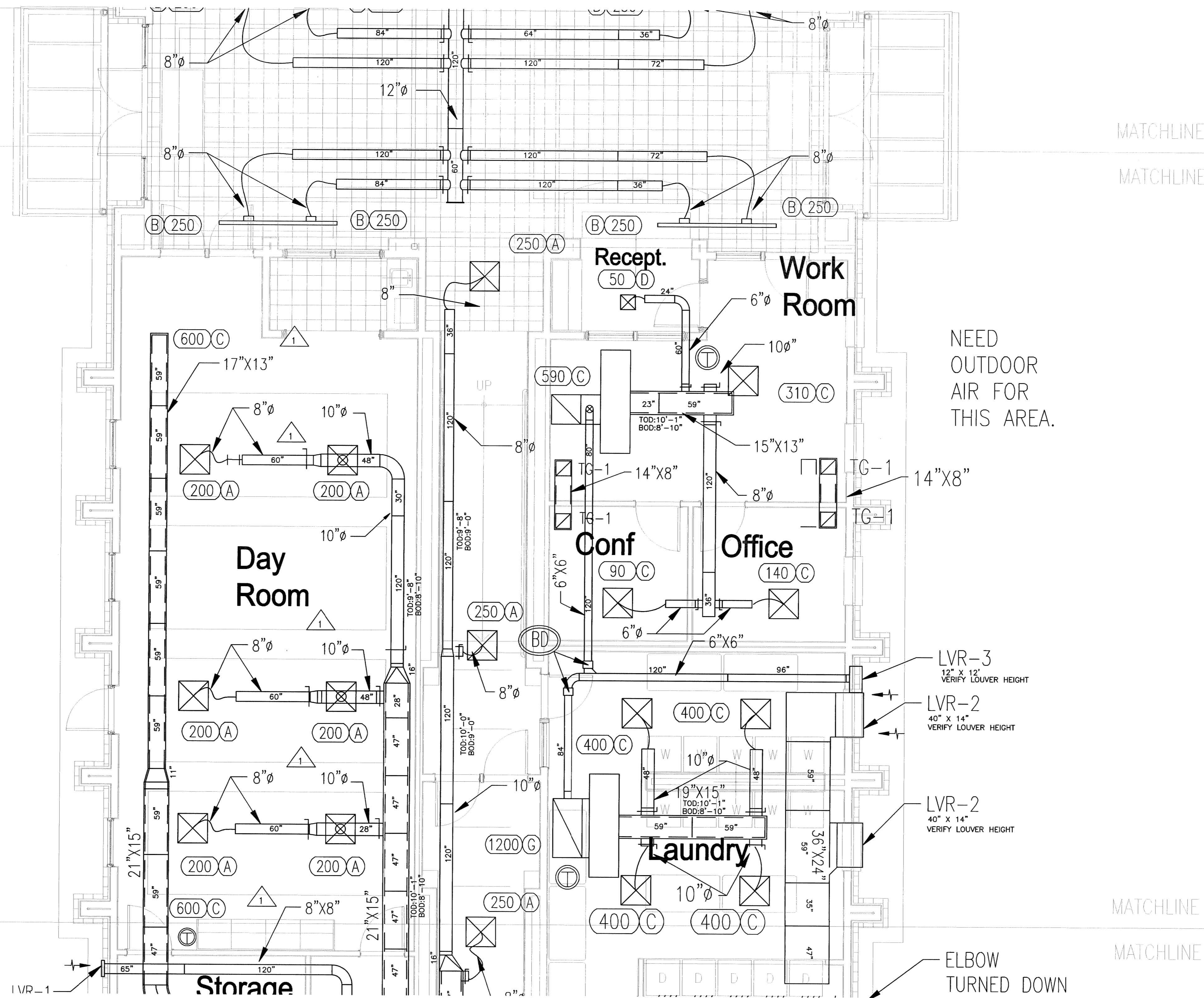
Mechanical First Floor Plan – West Wings

MECHANICAL LEGEND

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PROJECT RECORDS

DATE	REV.
2/7/11	SHOP DRAWING

Mechanical Plan – South Wing
SCALE: 1/4" = 1'-0"
0 4' 8'

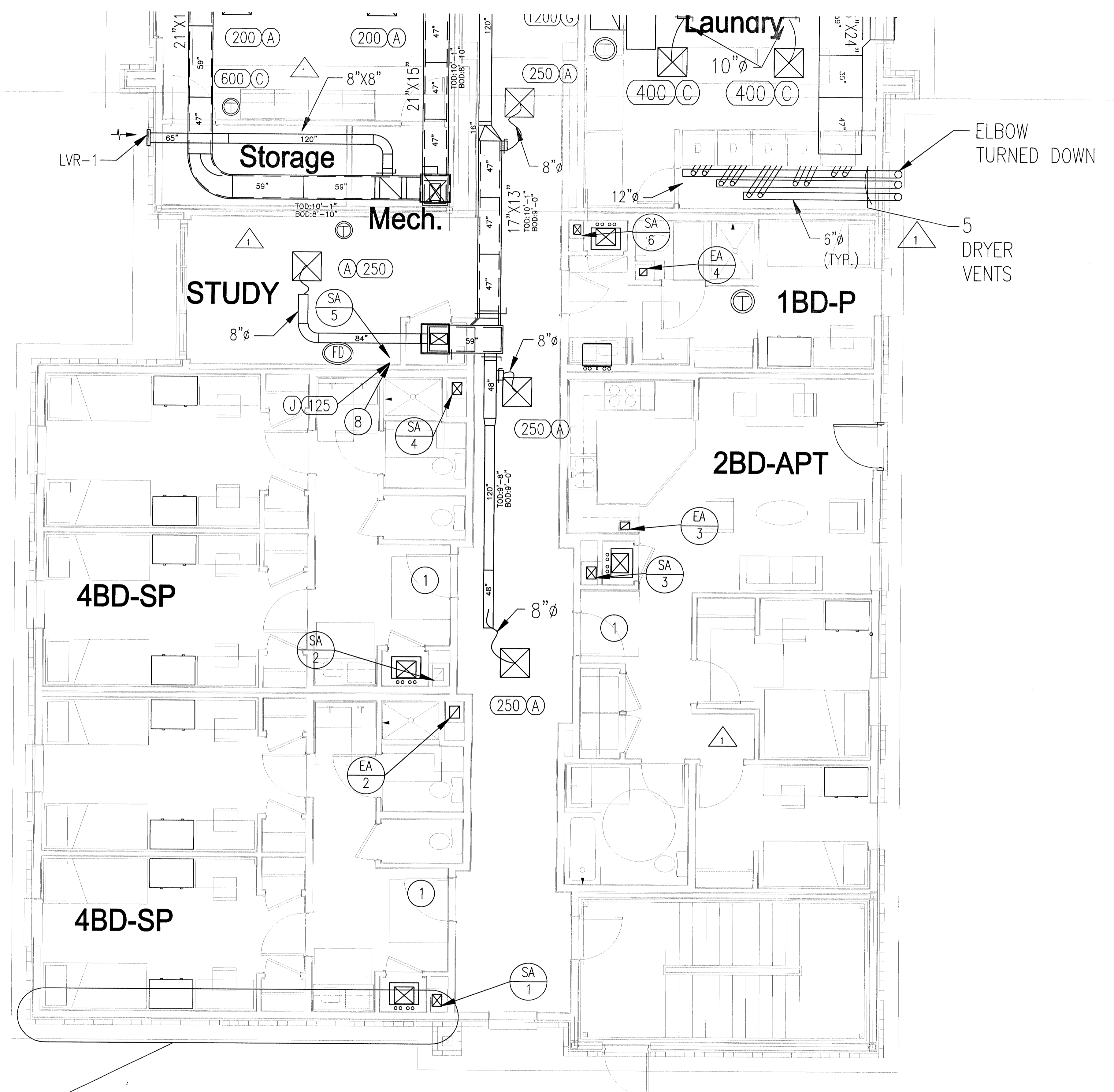
Eagle Contracting
AS BUILT

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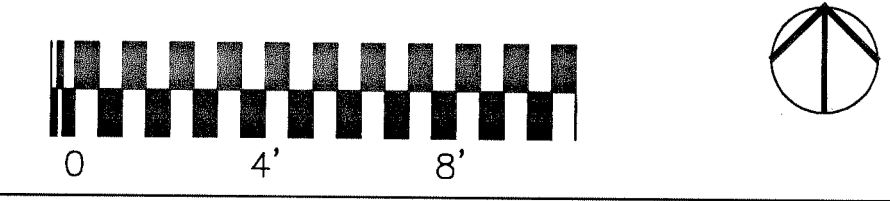
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Interior face of wall is continuous; wet wall does not have the typical 2" inset (4" wall transition 6" wall).

1 Mechanical Plan - South Wing
SCALE: 1/4" = 1'-0"



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Record Drawings

PROJECT RECORDS

DATE	REV.
2/7/11	SHOP DRAWING

Eagle Contracting
As Built

MECHANICAL LEGEND

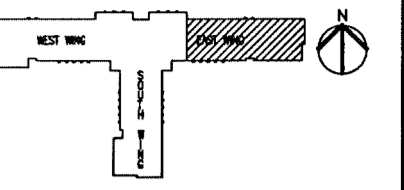
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- VOLUME DAMPER
- TURNING VANES
- DUCT TRANSITION
- RETURN DUCT W/ SMOKE/FIRE DAMPER
- ⓧ INDICATES DETAIL/ LOCATION NUMBER
- ⓧ INDICATES DRAWING TO REFERENCE

MECH. KEY NOTES

- ① SEE DRAWING M.A.D FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- ② SEE AHU DETAIL.
- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.

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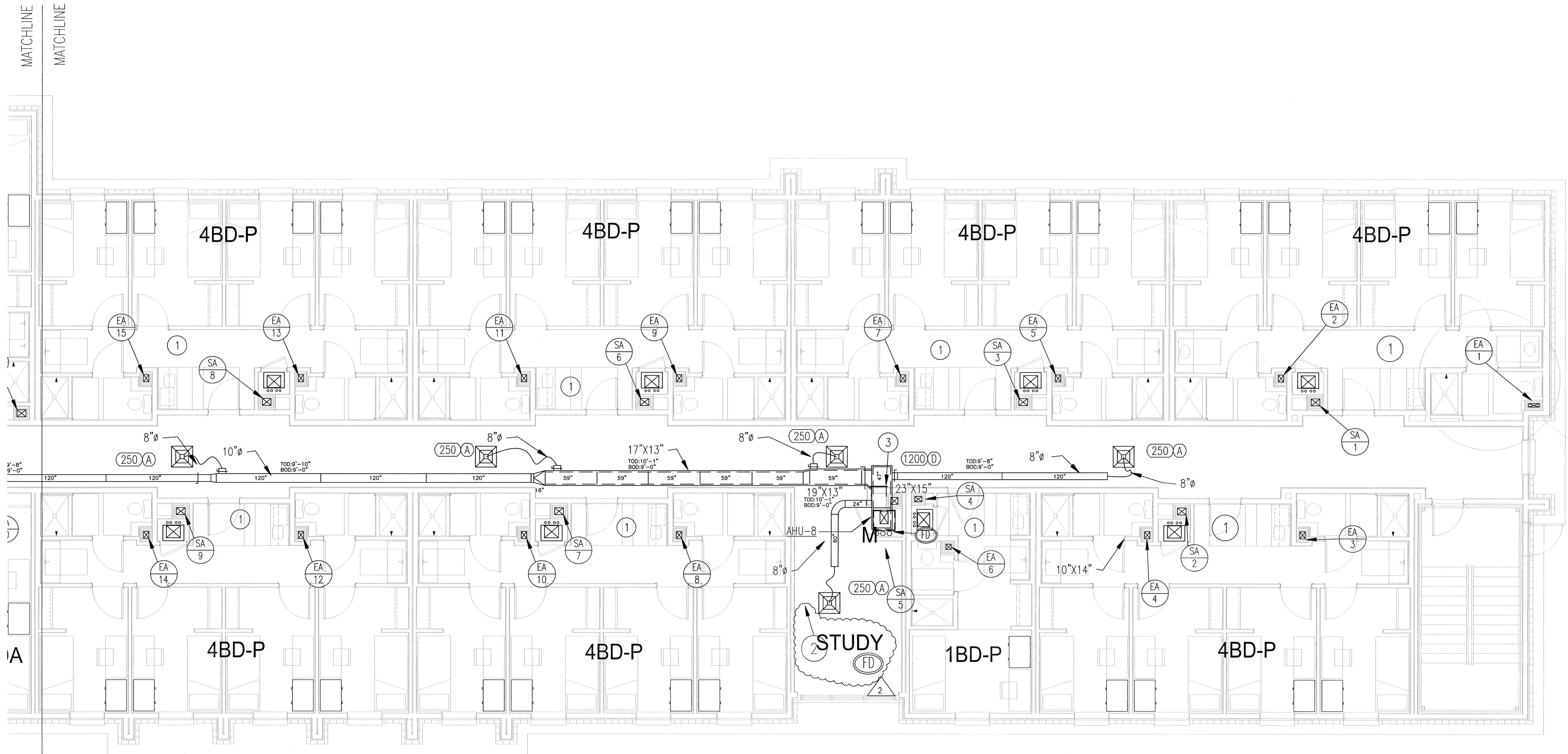
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Houston, Texas 77019

New Student Housing Project
Blinn College
Brenham, Texas

Record Drawings

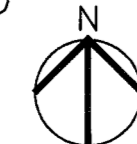
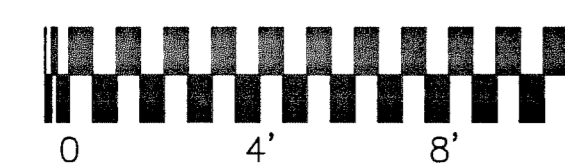
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DATE	REV.
2/23/11	SHOP DRAWING



2 Mechanical Plan – East Wing

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



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MECHANICAL LEGEND

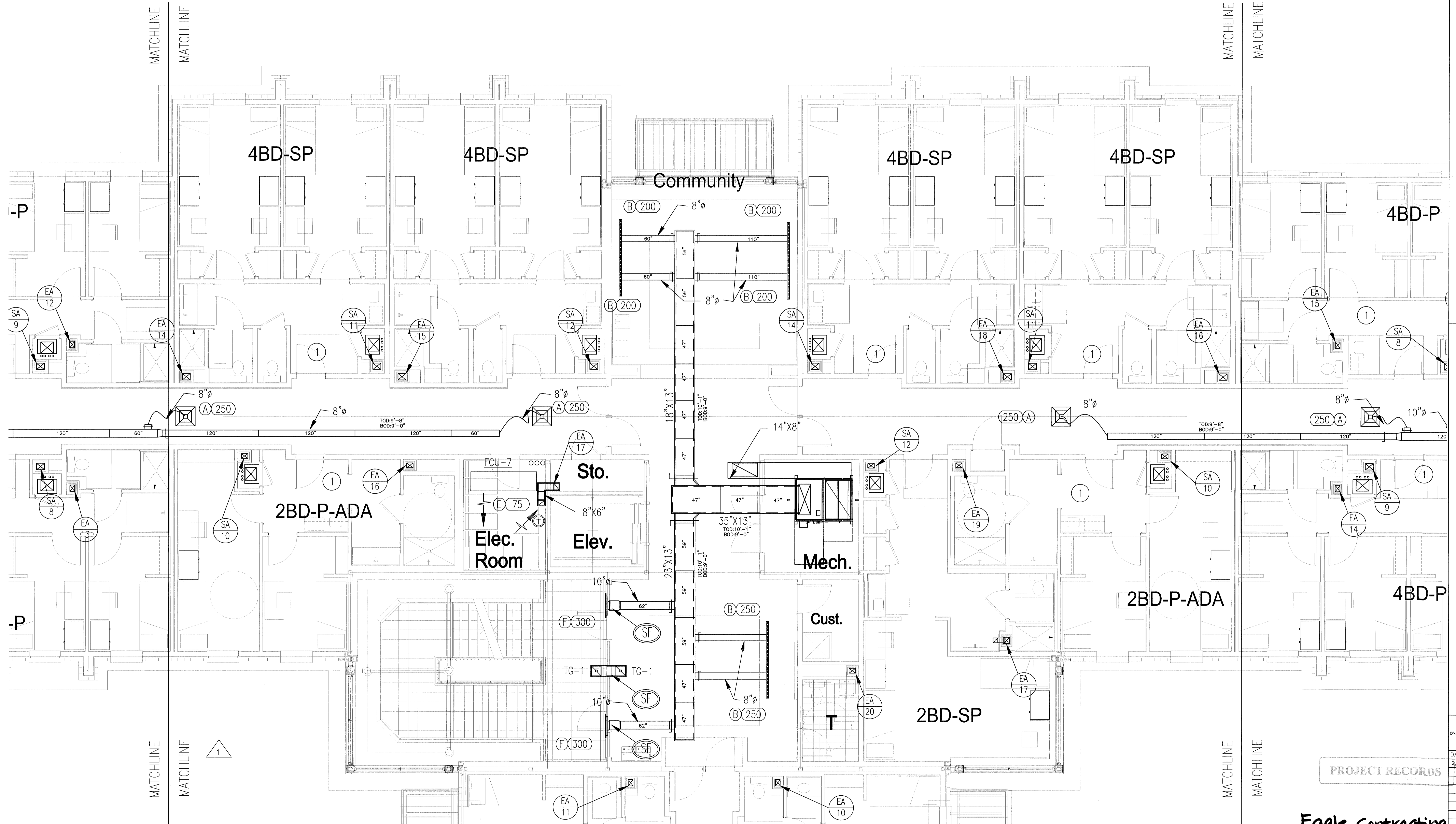
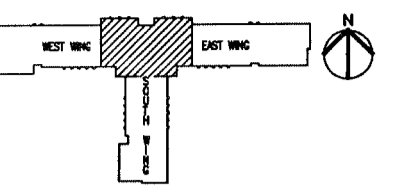
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- ☒ TURNING VANES
- ☒ DUCT TRANSITION
- ☒ RETURN DUCT W/ SMOKE/FIRE DAMPER
- ☒ FIRE DAMPER
- ☒ SMOKE/FIRE DAMPER
- ☒ BACKDRAFT DAMPER
- ☒ VOLUME DAMPER
- ☒ FIRE DAMPER
- ☒ SMOKE/FIRE DAMPER
- ☒ BACKDRAFT DAMPER
- X7 INDICATES DETAIL / LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

MECH. KEY NOTES

- ① SEE DRAWING M.A.D FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- ② SEE AHU DETAIL.
- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.

02/23/2011 09:00 Eagle Contracting L100-20

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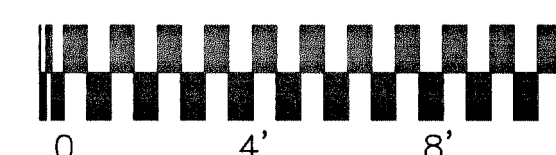
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DATE	REV.
2/3/11	SHOP DRAWING

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2 Mechanical Plan - West/East Wing
SCALE: 1/4" = 1'-0"



Mechanical Second Floor Plan - West/East Wings M2.2

MECHANICAL LEGEND

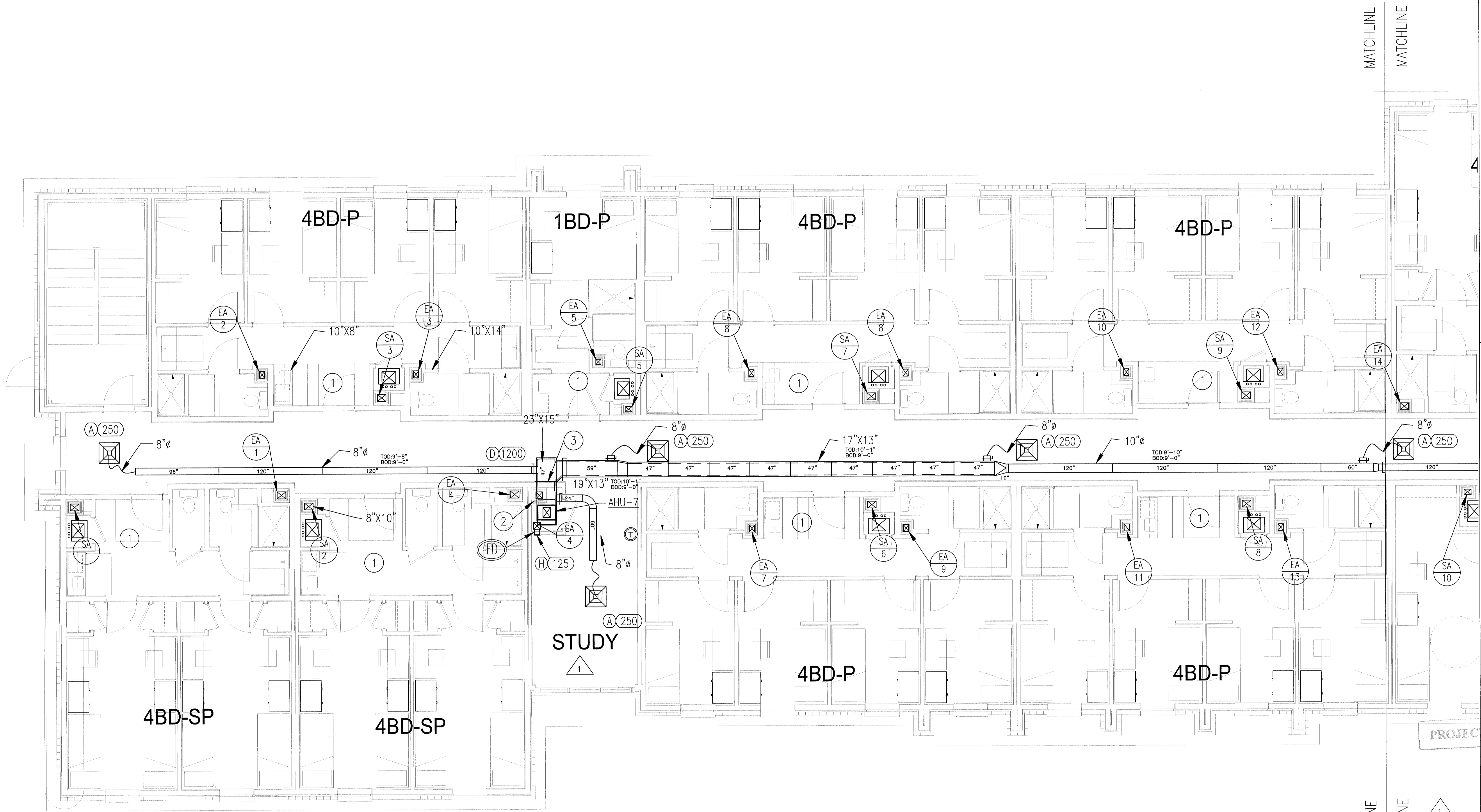
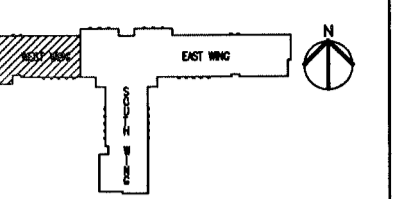
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- FIRE DAMPER
- SMOKE/FIRE DAMPER
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- INDICATES DETAIL/ LOCATION NUMBER
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MECH. KEY NOTES

- SEE DRAWING M4.0 FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- SEE AHU DETAIL.
- 30"x24" RETURN AIR FILTER GRILLE ON WALL.

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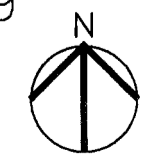
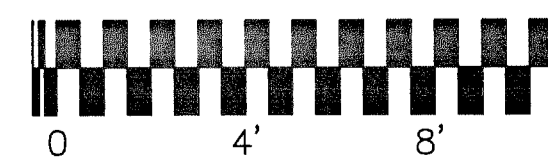
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DATE	REV.
2/3/11	SHOP DRAWING

2 Mechanical Plan - West Wing

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



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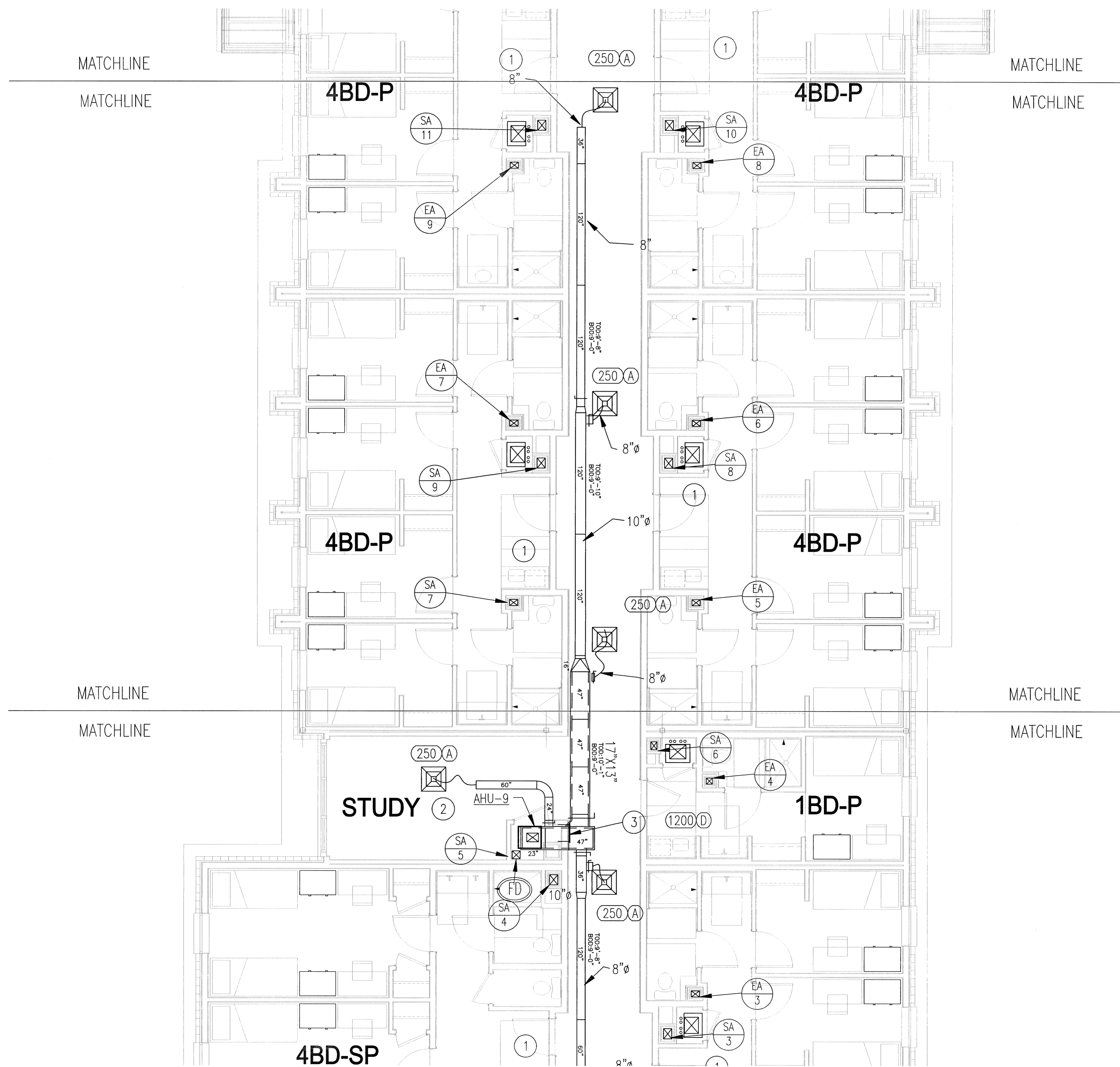
Mechanical Second Floor Plan - West Wings M2.3

MECHANICAL LEGEND

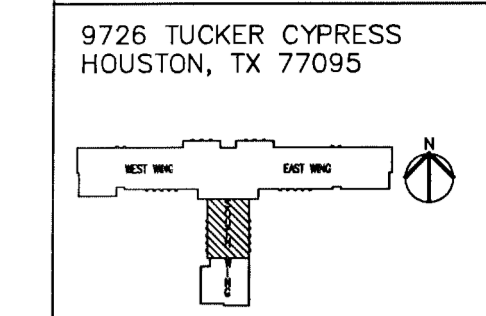
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- ☒ BACKDRAFT DAMPER
- ☒ FIRE DAMPER
- X7 INDICATES DETAIL / LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

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- ① SEE DRAWING M4.0 FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
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- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.



2 Mechanical Plan – South Wing
SCALE: 1/4" = 1'-0"



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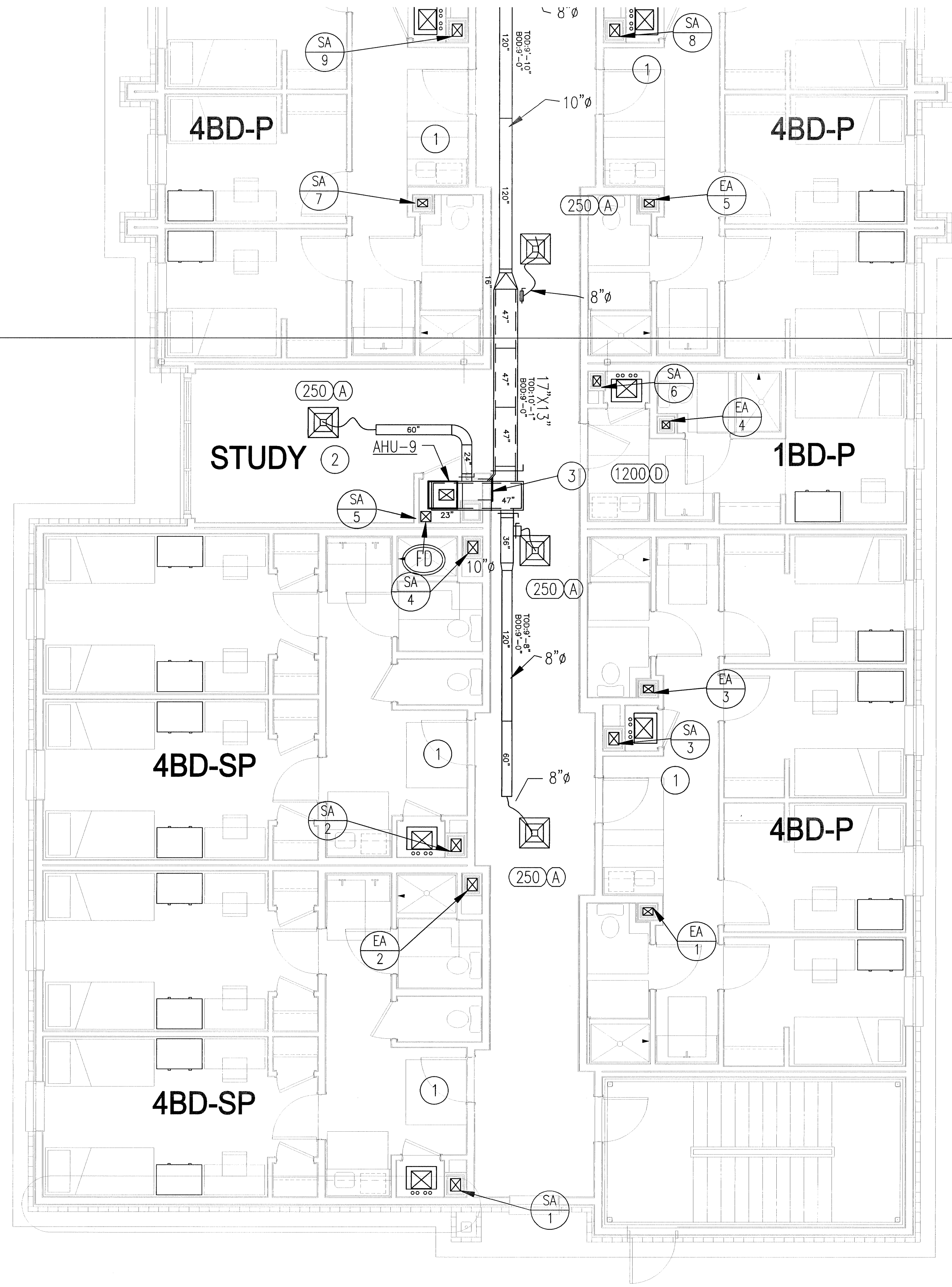
Mechanical Second Floor Plan – South Wings M2.4

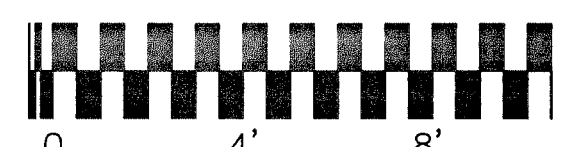
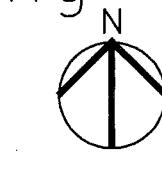
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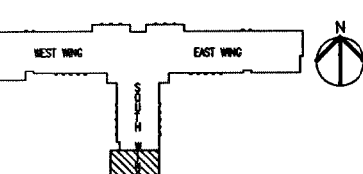
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- FIRE DAMPER
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- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.



2 Mechanical Plan - South Wing
 SCALE: 1/4" = 1'-0"



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MECHANICAL LEGEND

- ① TEMPERATURE SENSOR SEE SPECIFICATIONS.
- ☒ SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
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- TURNING VANES
- ☒ FIRE DAMPER
- ☒ SMOKE/FIRE DAMPER
- ☒ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⑩ INDICATES DETAIL / LOCATION NUMBER
- ⑩.1 INDICATES DRAWING TO REFERENCE

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- ③ 30"X24" RETURN AIR FILTER GRILLE ON WALL.

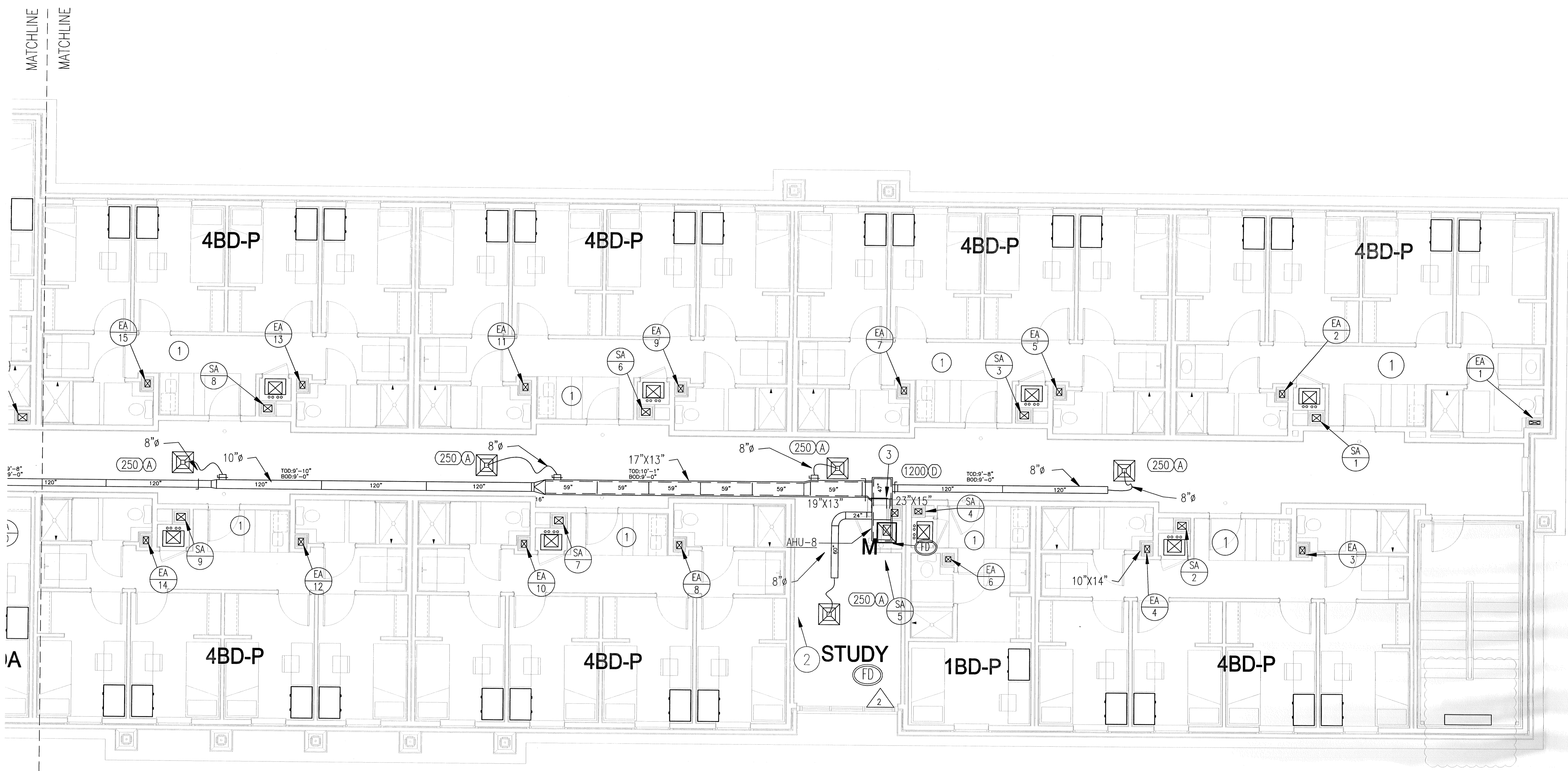
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M3.1



MATCHLINE MATCHLINE

3 Mechanical Plan - East Wing
SCALE: 1/4" = 1'-0"

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As Built

Mechanical Third Floor Plan - East Wings

MECHANICAL LEGEND

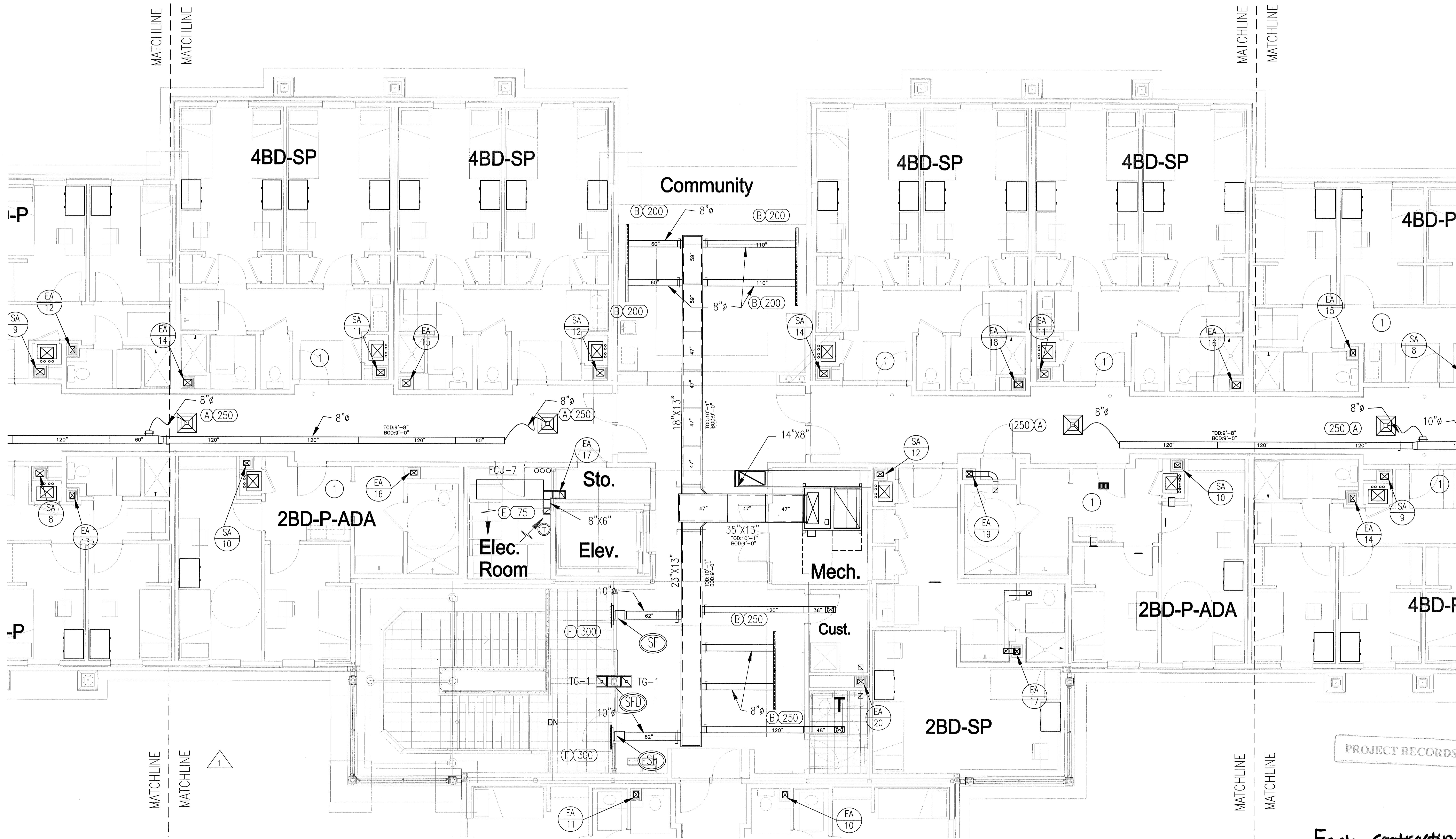
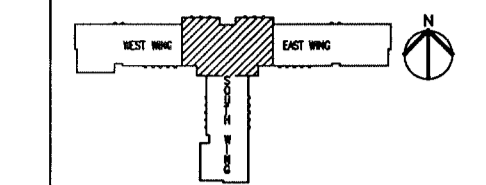
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- ⊞ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊞ VOLUME DAMPER
- ⊞ FIRE DAMPER
- ⊞ SMOKE/FIRE DAMPER
- ⊞
- X7 INDICATES DETAIL / LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

MECH. KEY NOTES

- 1 SEE DRAWING M4.0 FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- 2 SEE AHU DETAIL.
- 3 30"x24" RETURN AIR FILTER GRILLE ON WALL.

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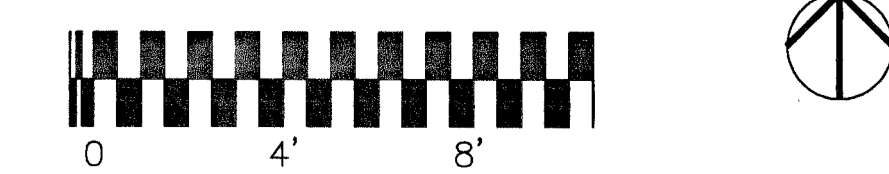
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3 Mechanical Plan - West/East Wing
SCALE: 1/4" = 1'-0"



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Mechanical Third Floor Plan - West/East Wings M3.2

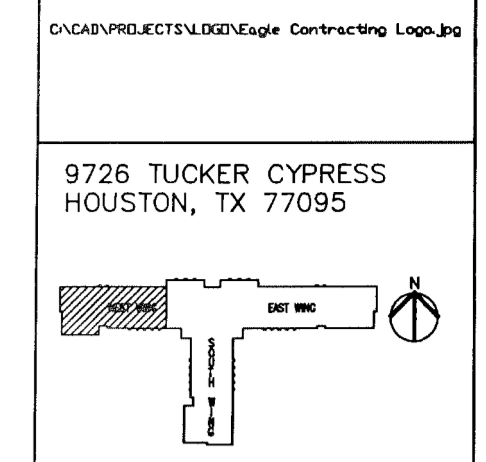
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- ⊞ TURNING VANES
- ⊞ DUCT TRANSITION
- ⊞ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊞ VOLUME DAMPER
- ⊞ FIRE DAMPER
- ⊞ SMOKE/FIRE DAMPER

MECH. KEY NOTES

- ① SEE DRAWING M4.0 FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- ② SEE AHU DETAIL.
- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.

- X7 - INDICATES DETAIL/ LOCATION NUMBER
- X1.4 - INDICATES DRAWING TO REFERENCE



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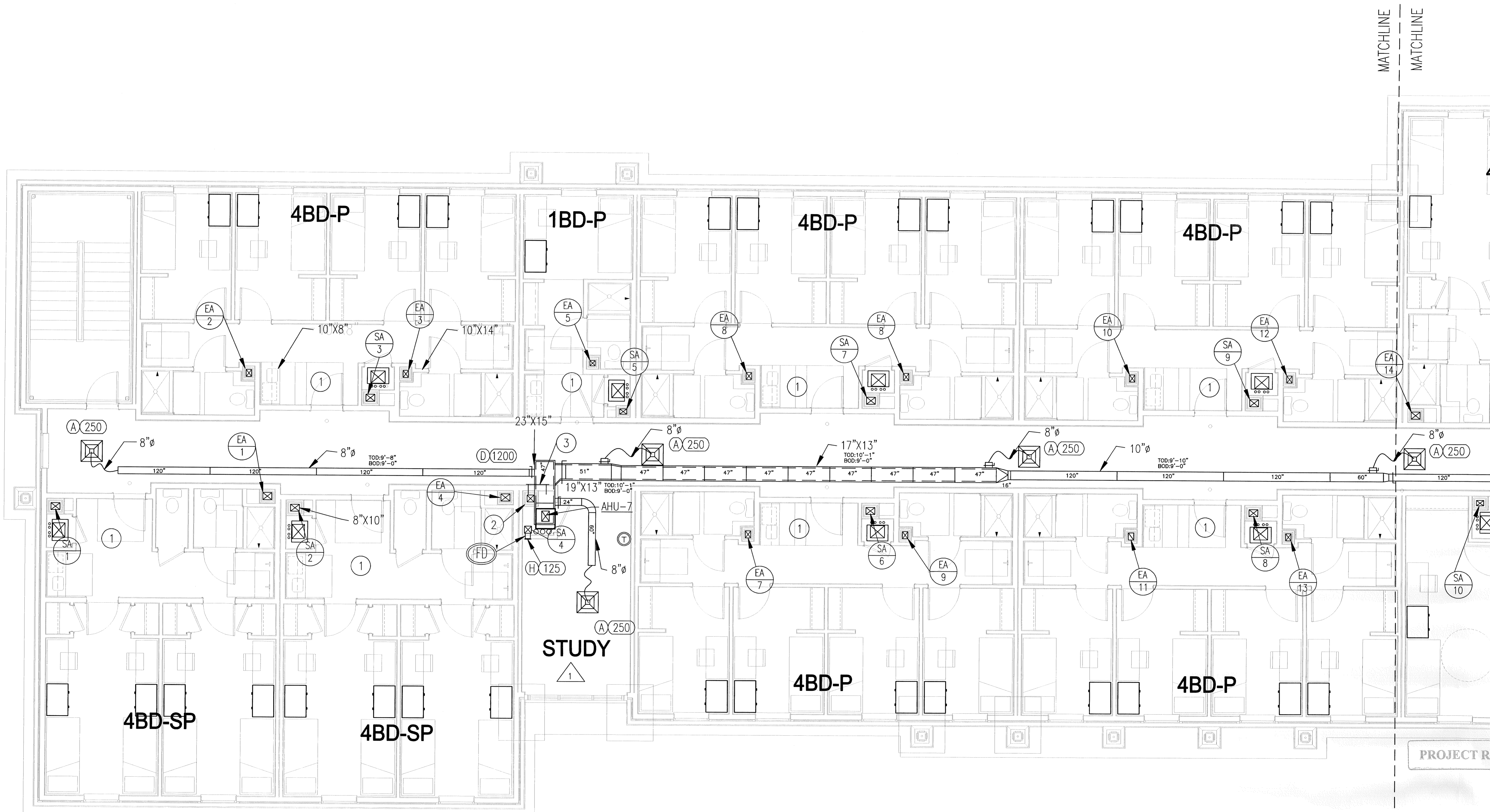
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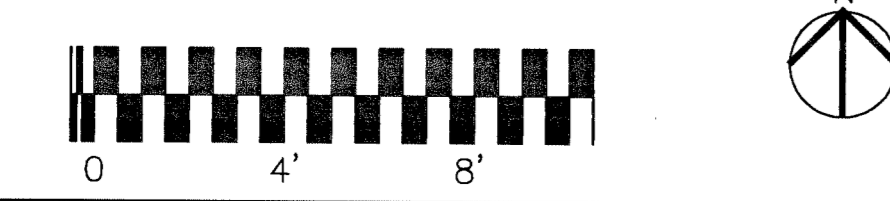
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Mechanical Third Floor Plan – West Wings M3.3

Record Drawings



3 Mechanical Plan – West Wing
SCALE: 1/4" = 1'-0"



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Mechanical Third Floor Plan – West Wings

M3.3

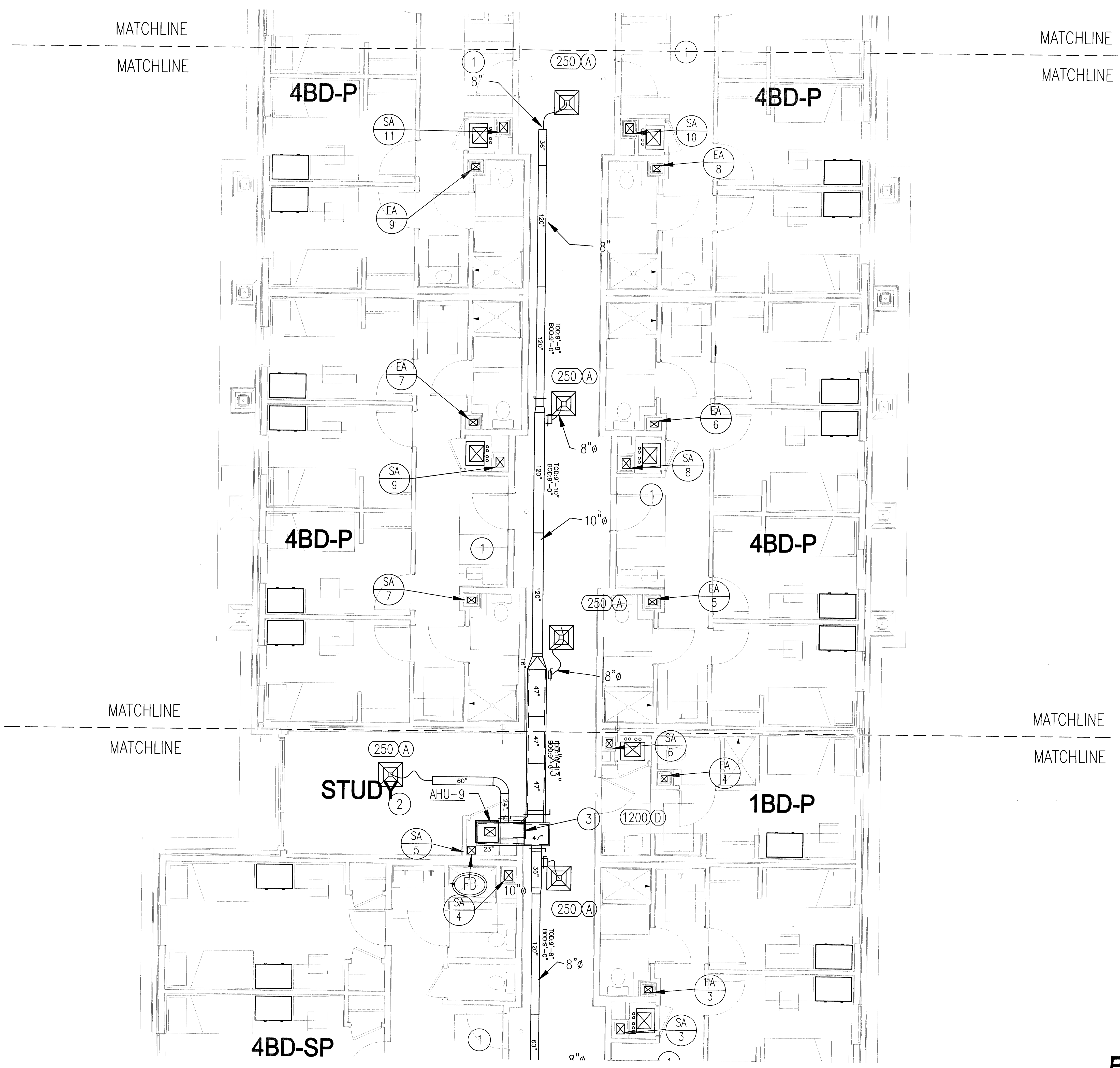
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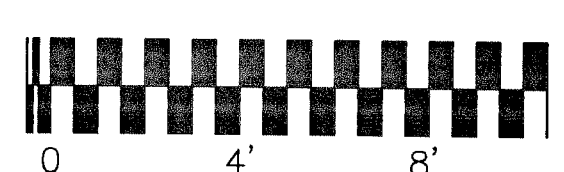
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- FIRE DAMPER
- SMOKE/FIRE DAMPER

- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1 INDICATES DRAWING TO REFERENCE

MECH. KEY NOTES

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- ② SEE AHU DETAIL.
- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.



3 Mechanical Plan - South Wing
 SCALE: 1/4" = 1'-0"


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Mechanical Third Floor Plan - South Wings M3.4

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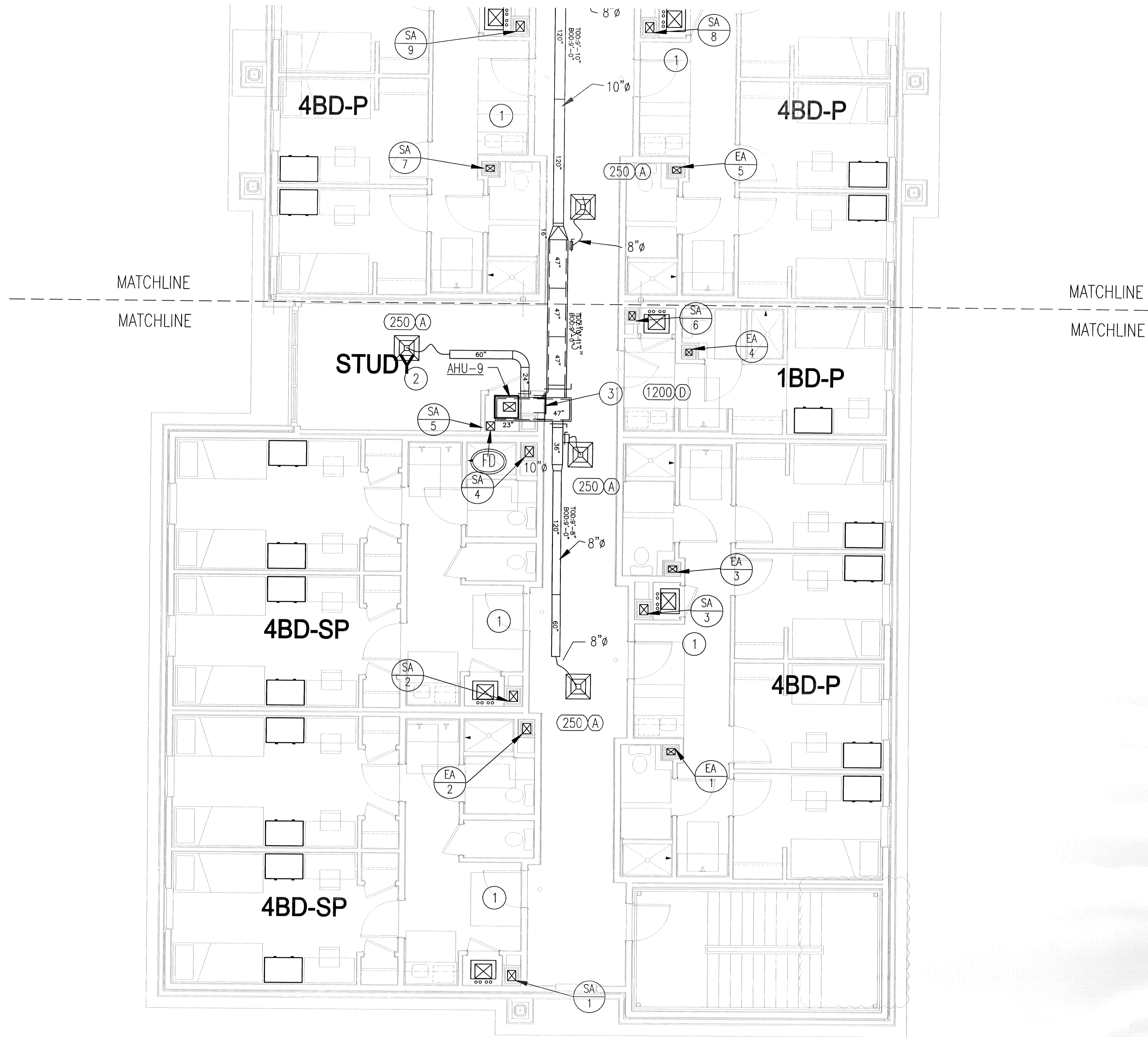
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MECHANICAL LEGEND

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- VOLUME DAMPER
- TURNING VANES
- DUCT TRANSITION
- RETURN DUCT W/SMOKE/FIRE DAMPER
- ①② FIRE DAMPER
- ①③ SMOKE/FIRE DAMPER
- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

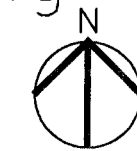
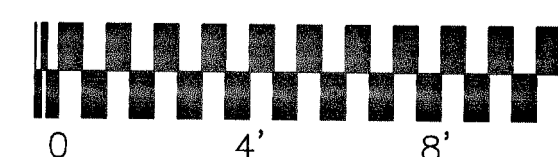
MECH. KEY NOTES

- ① SEE DRAWING M4.0 FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- ② SEE AHU DETAIL.
- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.



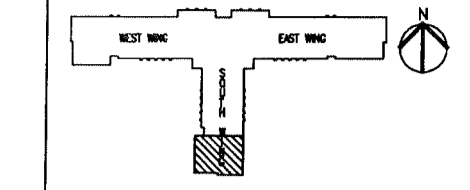
3 Mechanical Plan – South Wing

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



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Mechanical Third Floor Plan – South Wings M3.5

MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- ⊞ SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- ⊞ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION
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- ⊞ SMOKE/FIRE DAMPER

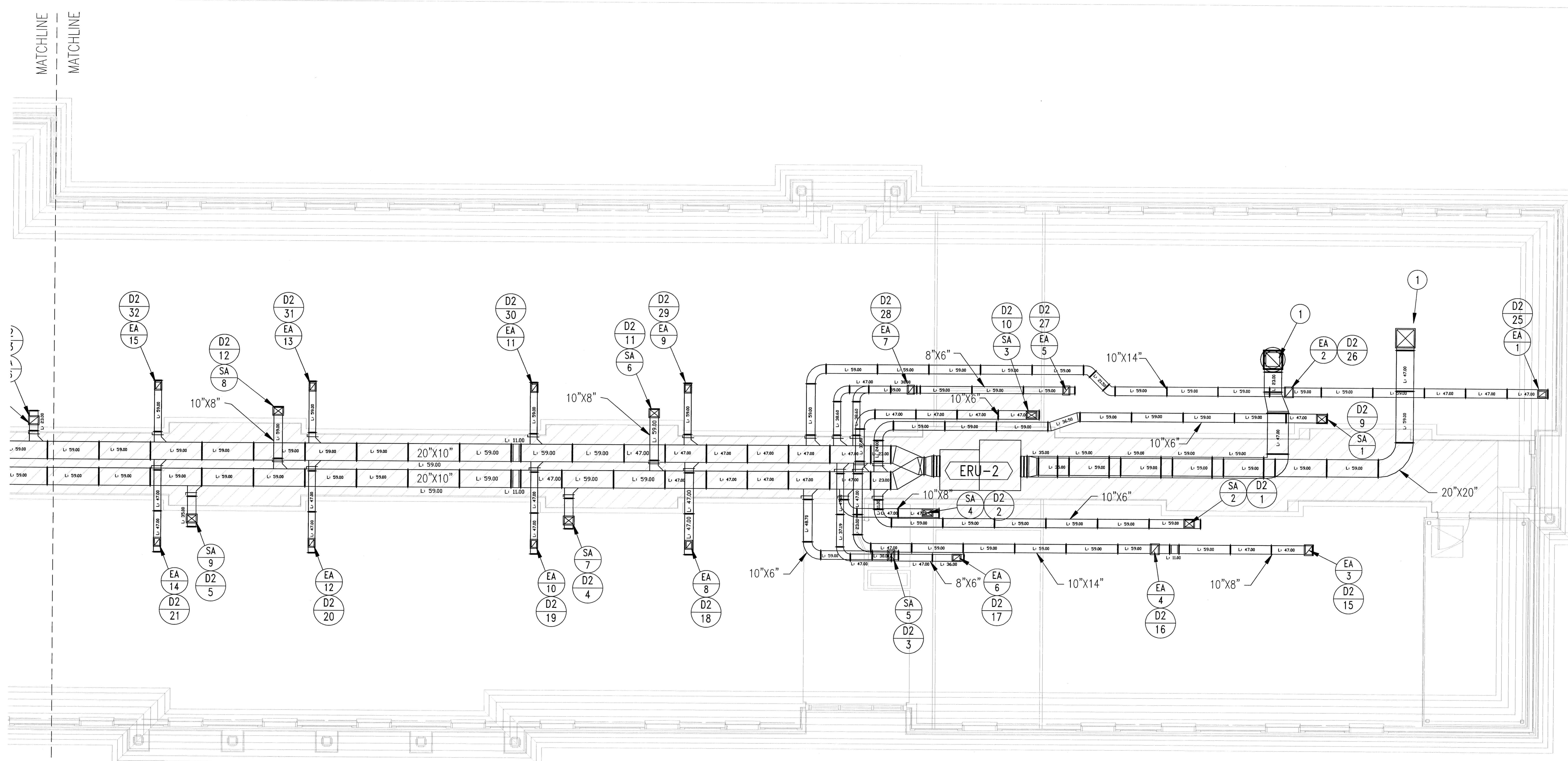
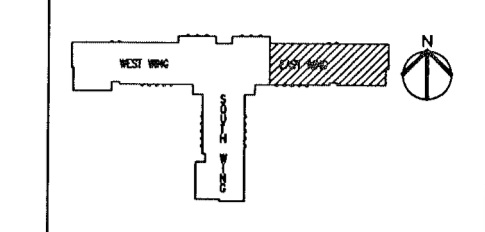
KEY NOTES

- ① DUCT UP THROUGH ROOF.
- ② XXX
XXX

- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

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4 Mechanical Plan - East Wing
SCALE: 1/4" = 1'-0"



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Mechanical Attic Floor Plan - East Wings

M4.1

MECHANICAL LEGEND

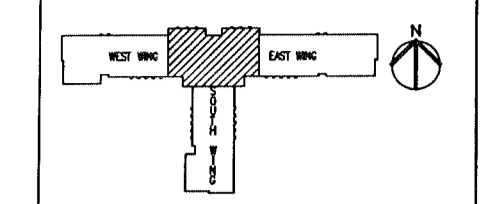
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- ⊞ VOLUME DAMPER
- ⊞ FIRE DAMPER
- ⊞ SMOKE/FIRE DAMPER
- ⊞ INDICATES DETAIL / LOCATION NUMBER
- ⊞ INDICATES DRAWING TO REFERENCE

KEY NOTES

- ① DUCT UP THROUGH ROOF.
- ② XXX
XXX

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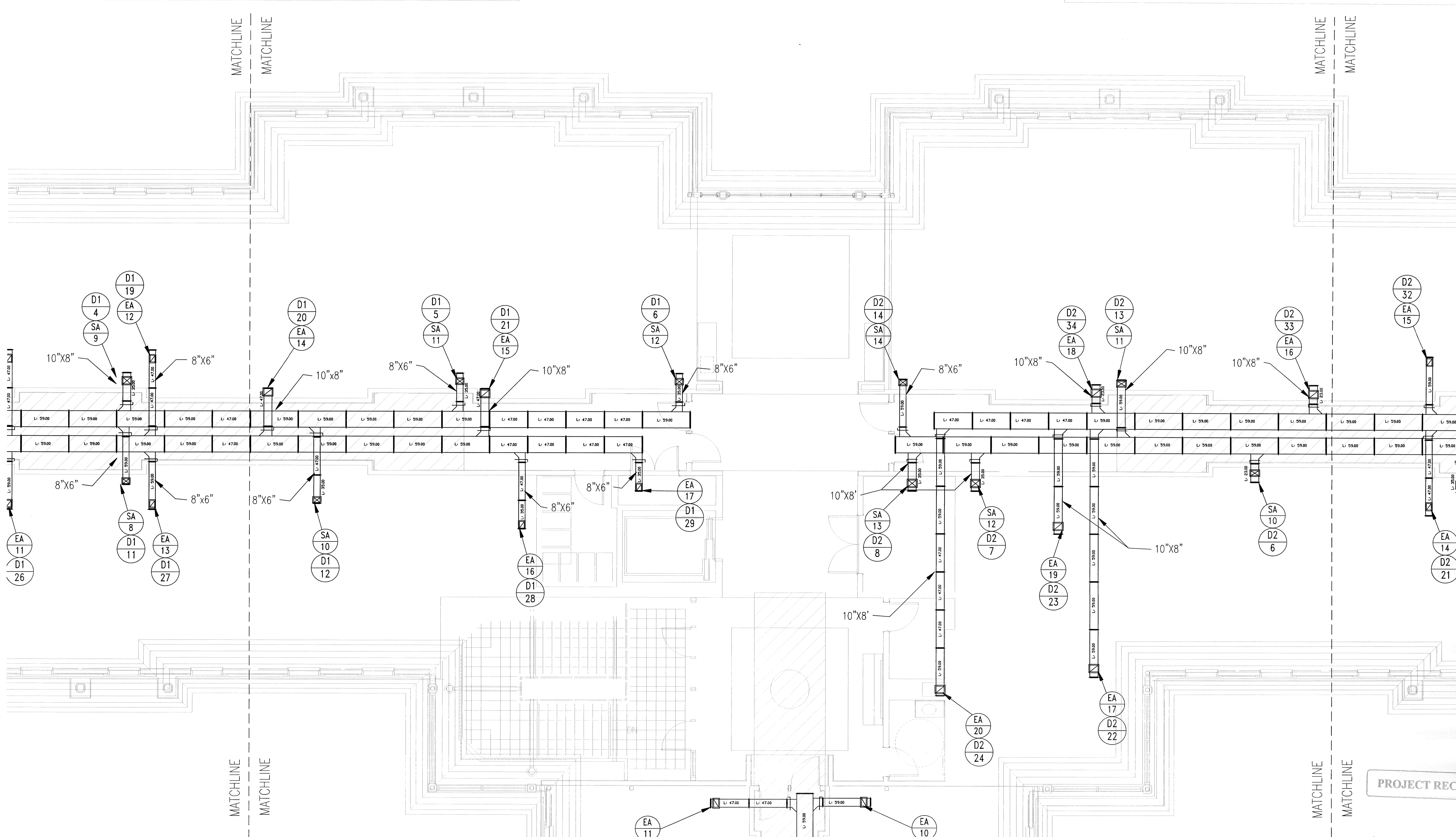
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DATE	REV.
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4/27/11	REV. + ELEV. C.O.

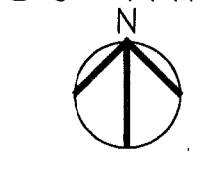
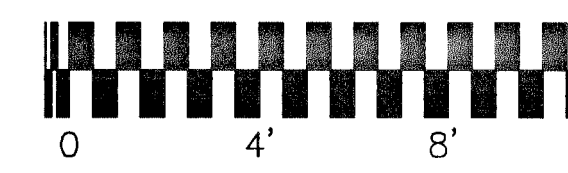
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4 Mechanical Plan - East/West Wing

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



Mechanical Attic Floor Plan - East/West Wings M4.2

MECHANICAL LEGEND

- TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
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- VOLUME DAMPER
- FIRE DAMPER
- SMOKE/FIRE DAMPER

KEY NOTES

- ① DUCT UP THROUGH ROOF.
- ② XXX
XXX

- X7 INDICATES DETAIL / LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

9726 TUCKER CYPRESS
HOUSTON, TX 77095

Ambrose and House HADP
2323 South Shepherd Suite 1014
Houston, Texas 77019

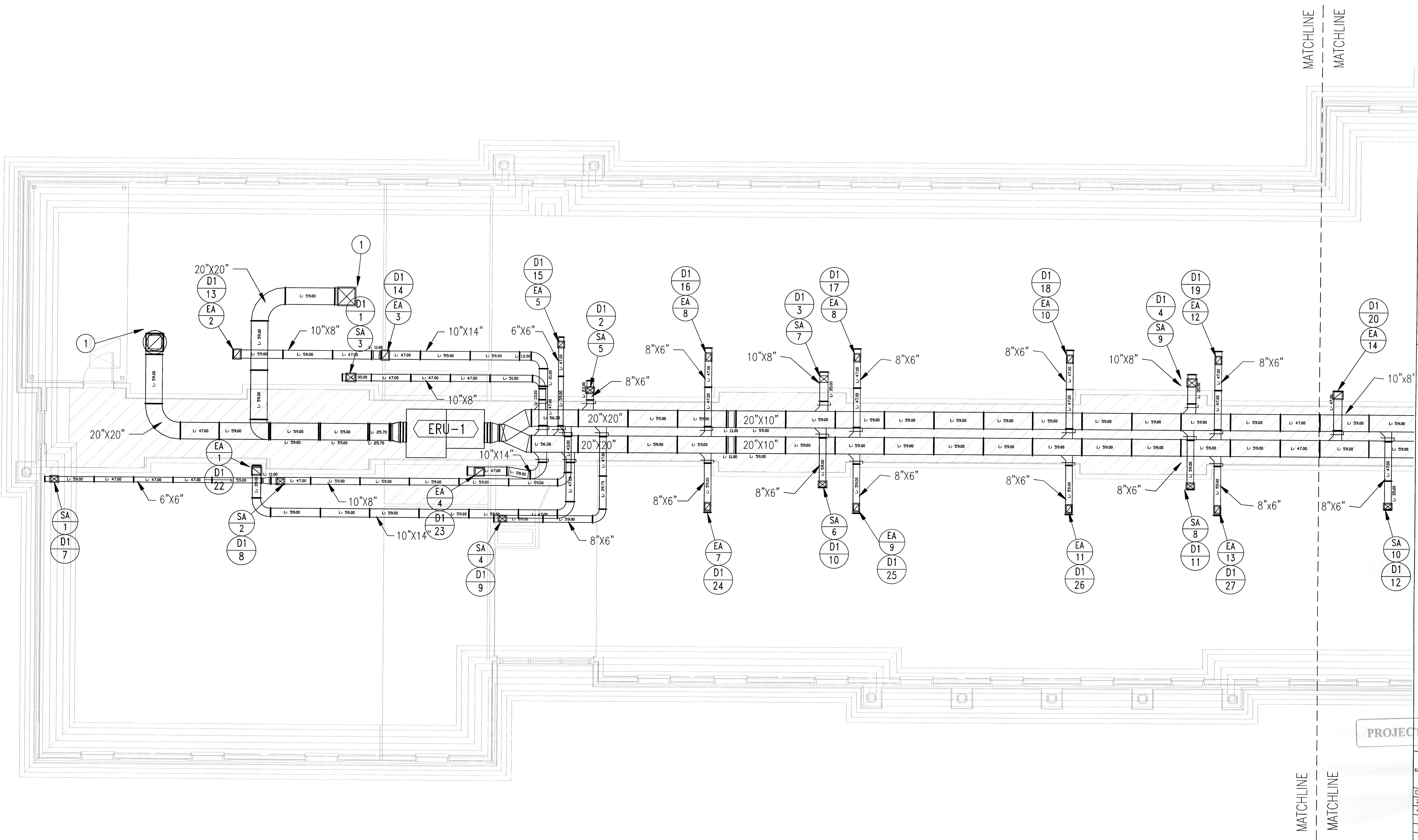
New Student Housing Project
Blinn College
Brenham, Texas

Record Drawings

PROJECT RECORDS

DATE	REV.
2/14/11	SHOP DRAWING
4/27/11	REV. + ELEV. C.O.

4 Mechanical Plan - West Wing
SCALE: 1/4" = 1'-0"



Eagle Contracting
As Built

Mechanical Attic Floor Plan - West Wings

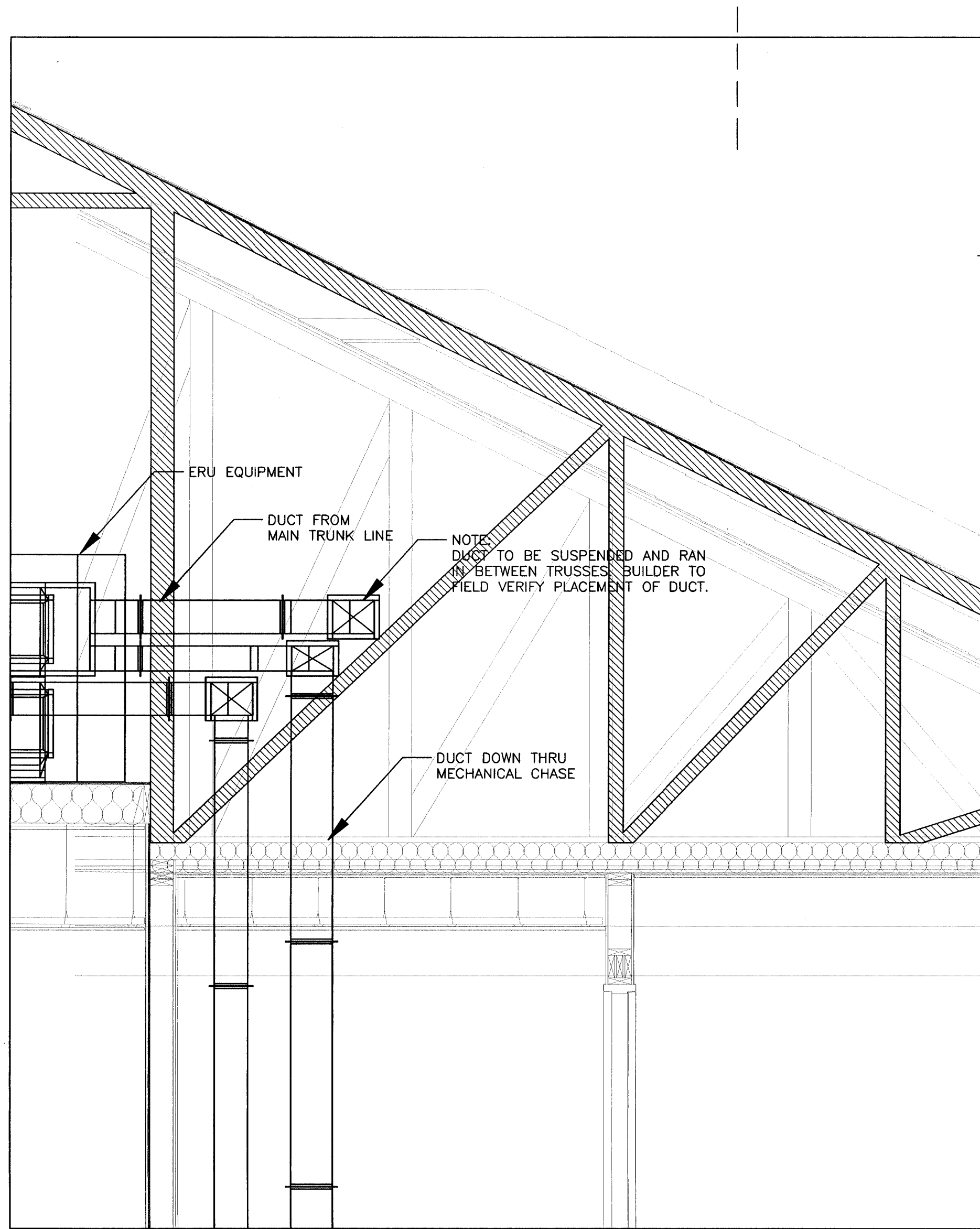
M4.3

MECHANICAL LEGEND

- TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- VOLUME DAMPER
- FIRE DAMPER
- SMOKE/FIRE DAMPER
- DUCT TRANSITION
- RETURN DUCT W/SMOKE/FIRE DAMPER
- INDICATES DETAIL/ LOCATION NUMBER
- INDICATES DRAWING TO REFERENCE

KEY NOTES

- 1 DUCT UP THROUGH ROOF.
- 2 XXX
XXX



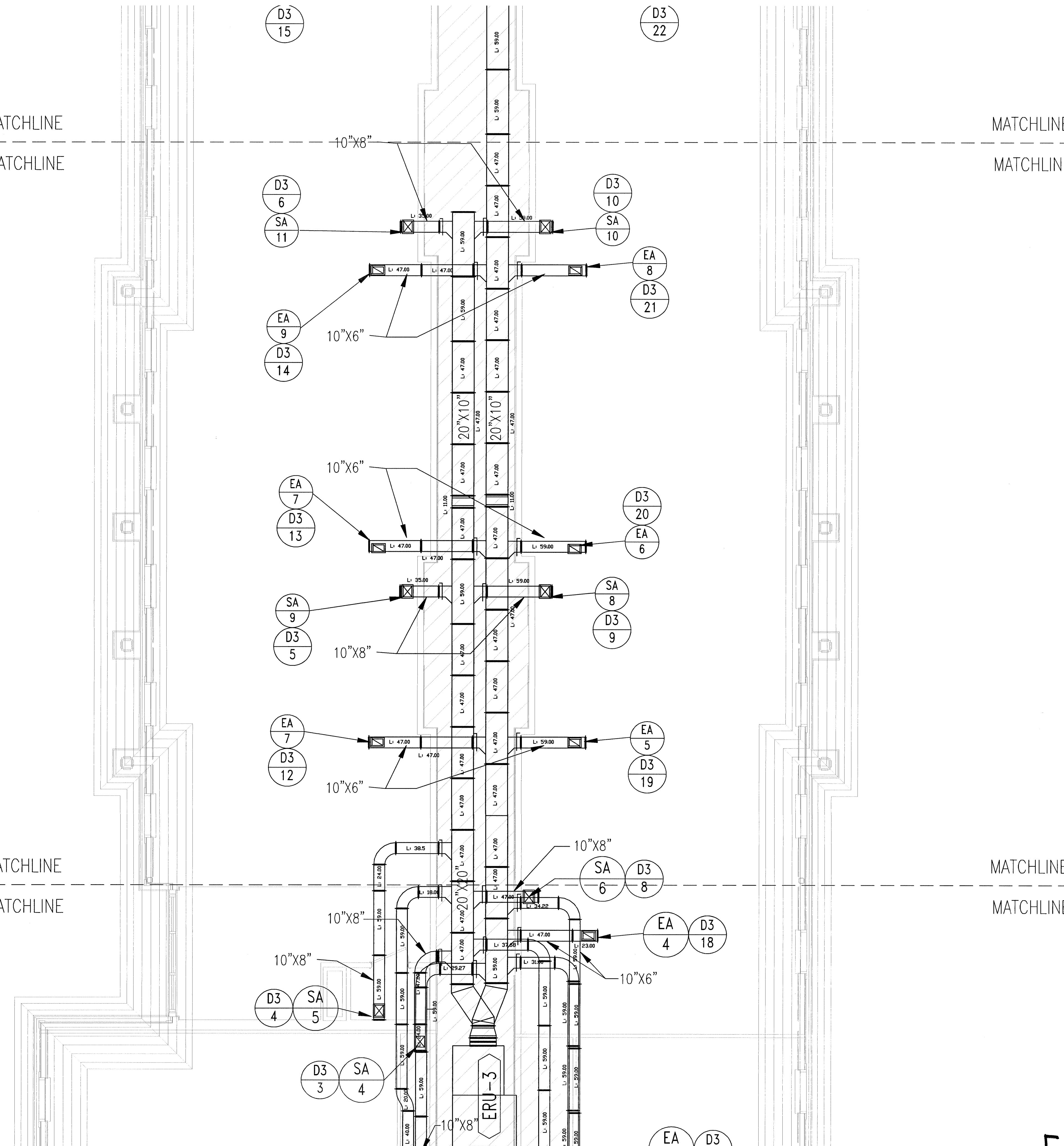
Mechanical Attic Section Detail (Typ.)
SCALE: 1/2" = 1'-0"

MATCHLINE
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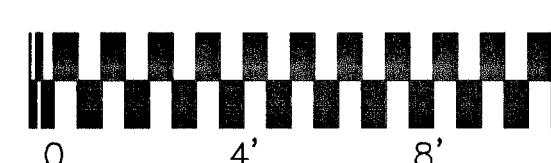
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MATCHLINE
MATCHLINE

MATCHLINE
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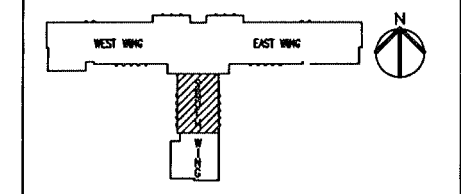


4 Mechanical Plan - South Wing
SCALE: 1/4" = 1'-0"



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HOUSTON, TX 77095



Ambrose and House HADP
2323 South Shepherd Suite 1014
Houston, Texas 77019

New Student Housing Project
Blinn College
Brenham, Texas

Record Drawings

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PROJECT RECORDS

DATE	REV.
2/14/11	SHOP DRAWING
4/27/11	REV. + ELEV. C.O.

Eagle Contracting
As Built

Mechanical Attic Floor Plan - South Wings

M4.4

MECHANICAL LEGEND

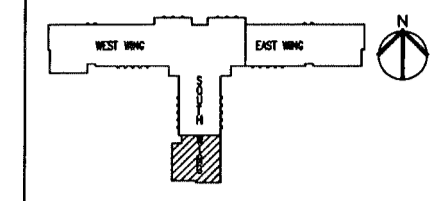
- TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- TURNING VANES
- DUCT TRANSITION
- RETURN DUCT W/SMOKE/FIRE DAMPER
- VOLUME DAMPER
- FIRE DAMPER
- SMOKE/FIRE DAMPER
- INDICATES DETAIL/ LOCATION NUMBER
- INDICATES DRAWING TO REFERENCE

KEY NOTES

- ① DUCT UP THROUGH ROOF.
- ② XXX
XXX

C:\CAD\PROJECTS\LOGO\EGC Logo.dwg

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New Student Housing Project
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Brenham, Texas

Record Drawings

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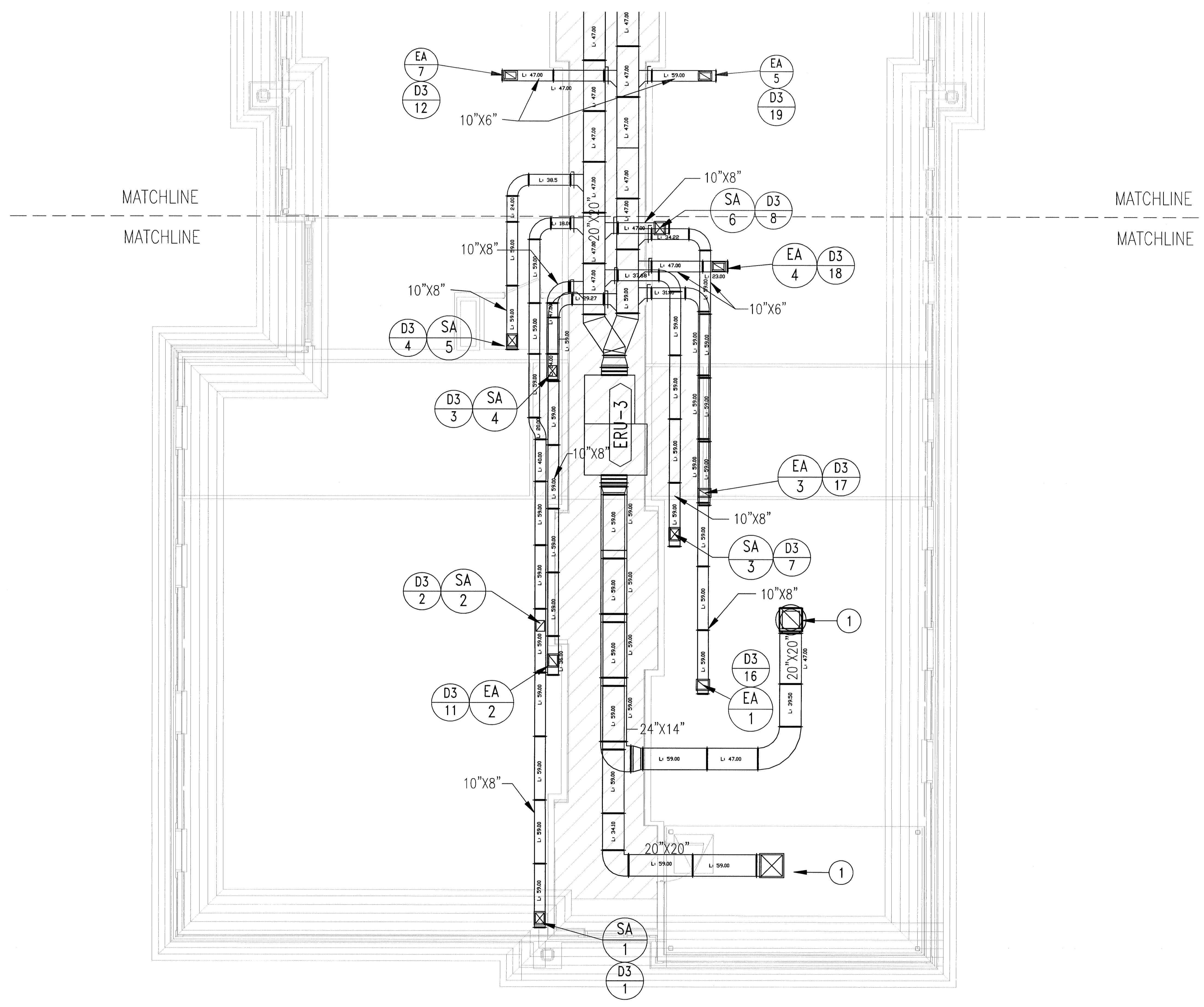
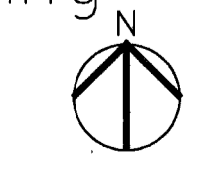
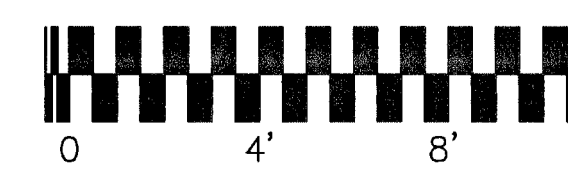
DATE	REV.
2/14/11	SHOP DRAWING
4/27/11	REV. + ELEV. C.O.

PROJECT RECORDS

Eagle Contracting
AS BUILT

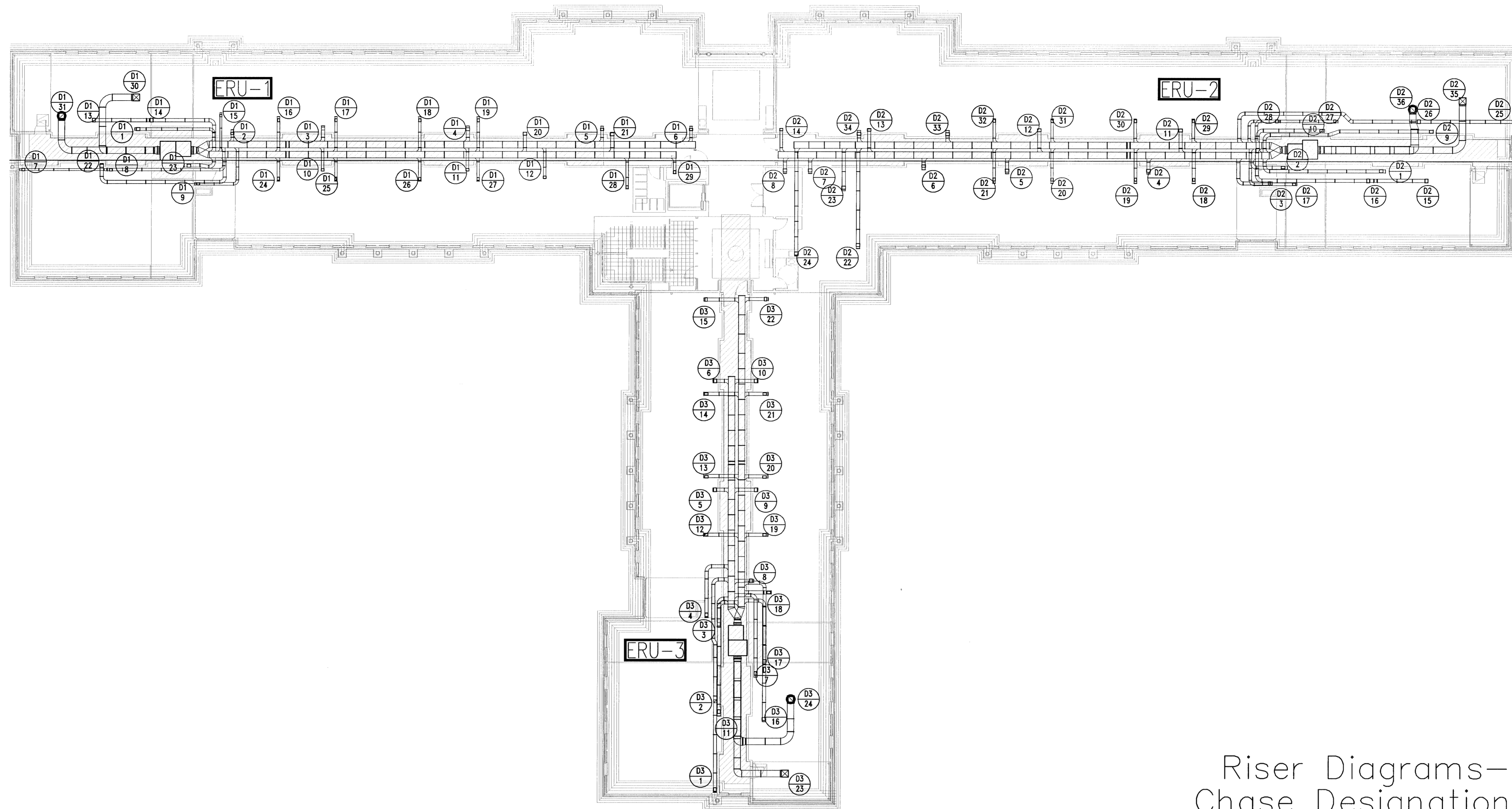
4 Mechanical Plan – South, Wing

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



Mechanical Attic Floor Plan – South Wings

M4.5

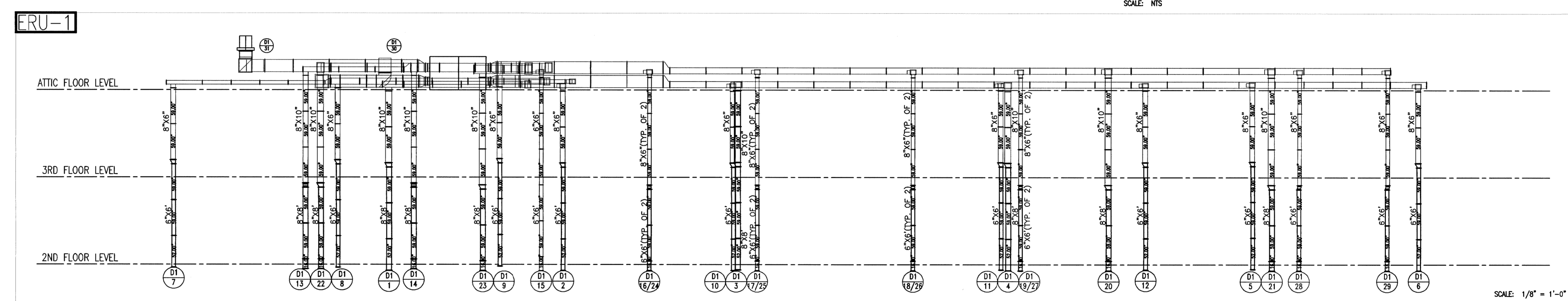


Riser Diagrams -
Chase Designation

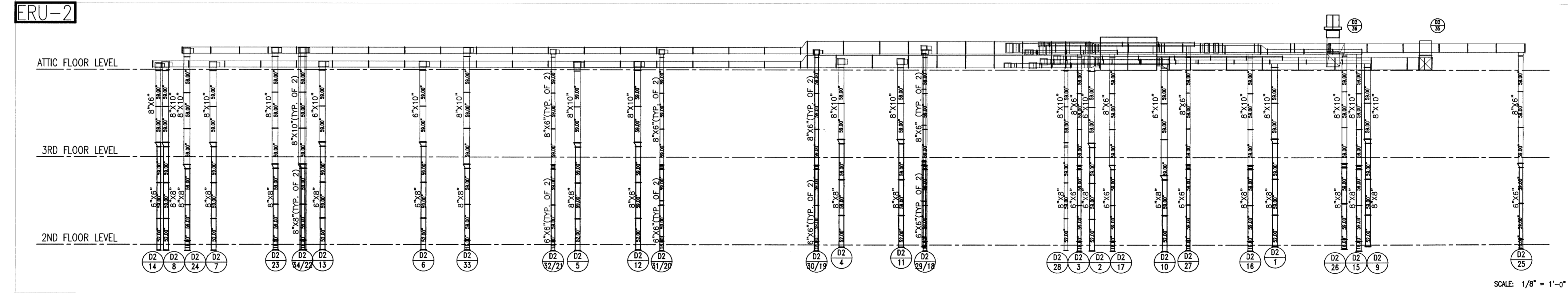
SCALE: NTS

MECHANICAL GENERAL NOTES

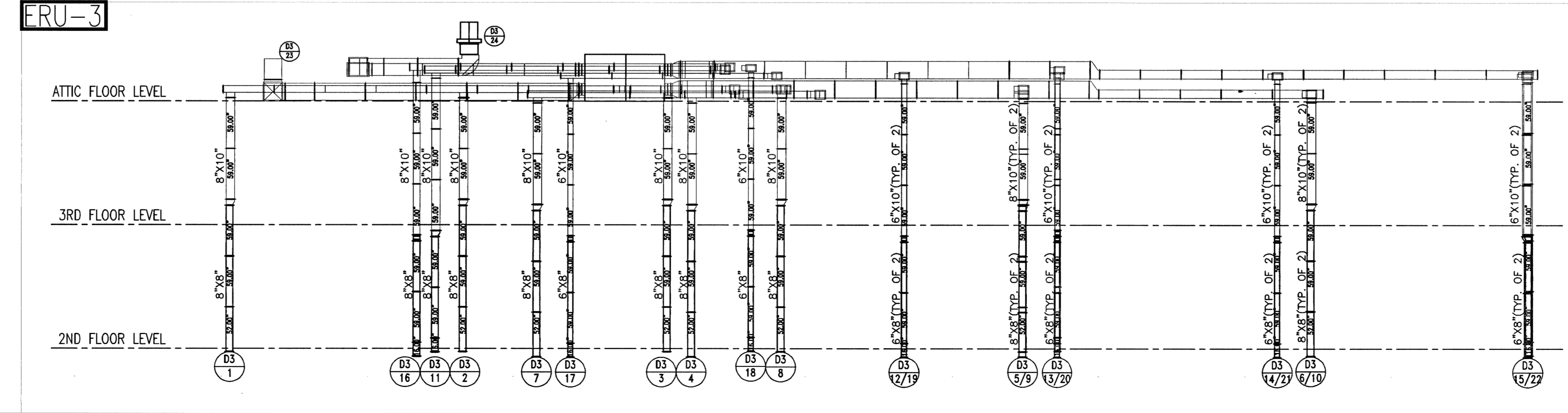
FLOOR TO FLOOR HEIGHT ARE ASSUMED AND SHOULD BE FIELD VERIFIED.
 RISER TAPS TO BE FIELD VERIFIED. VERIFY A/C CHASE SIZE AND LOCATION PRIOR TO INSTALLATION OF DUCT.
 DUCT TO BE STRUCTURALLY SUPPORTED WITHIN CHASE TO MAINTAIN ITS SHAPE AND INTEGRITY.



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



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



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

Eagle Contracting
As Built
Mechanical Elevations
Riser Diagrams

PROJECT RECORDS

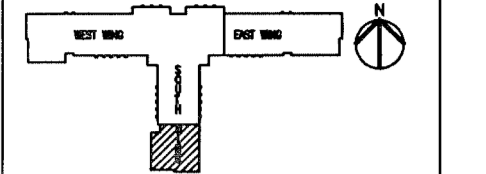
DATE	REV.
2/14/11	SHOP DRAWING

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Houston, Texas 77019

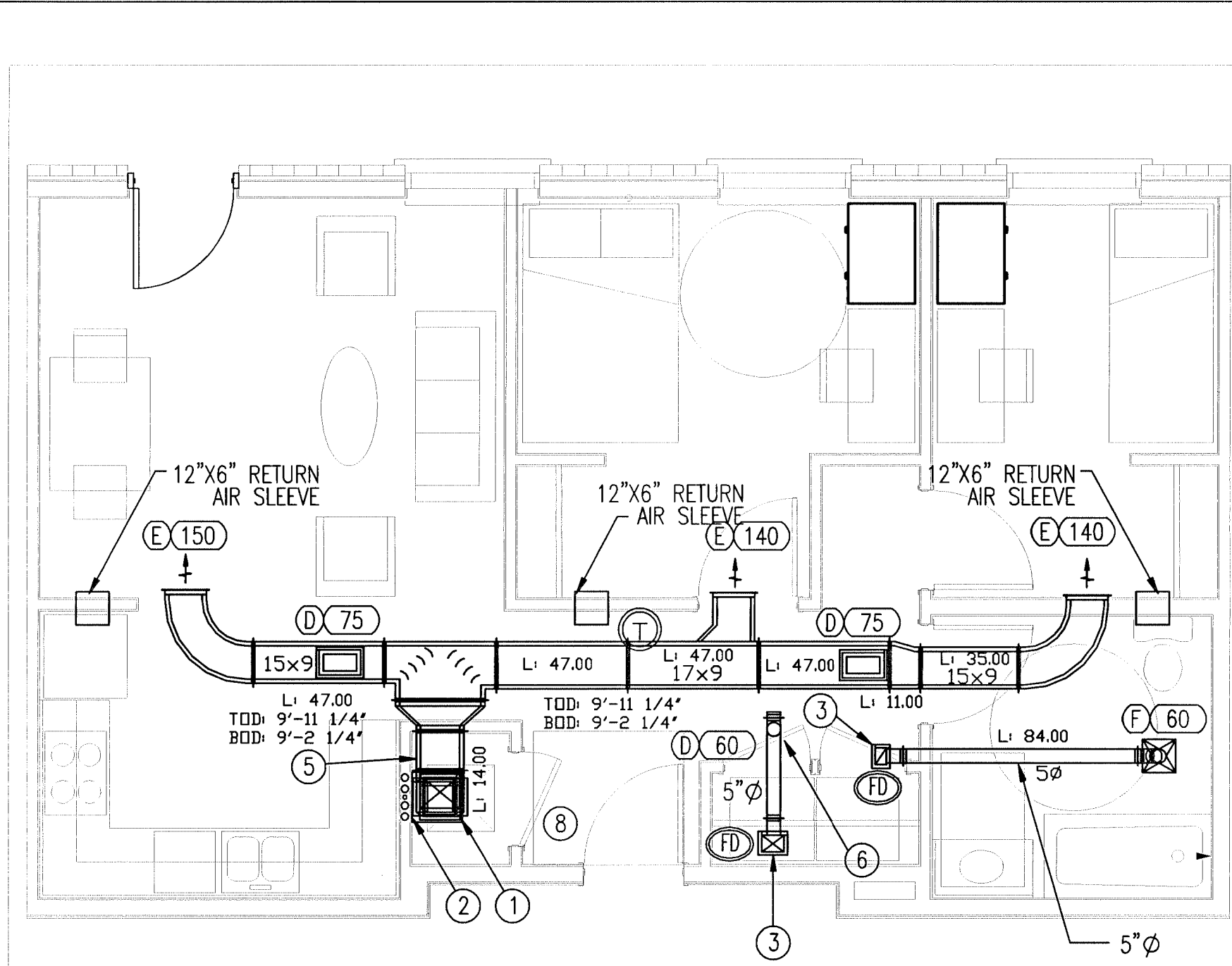
New Student Housing Project
Binn College
Brenham, Texas

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HOUSTON, TX 77095

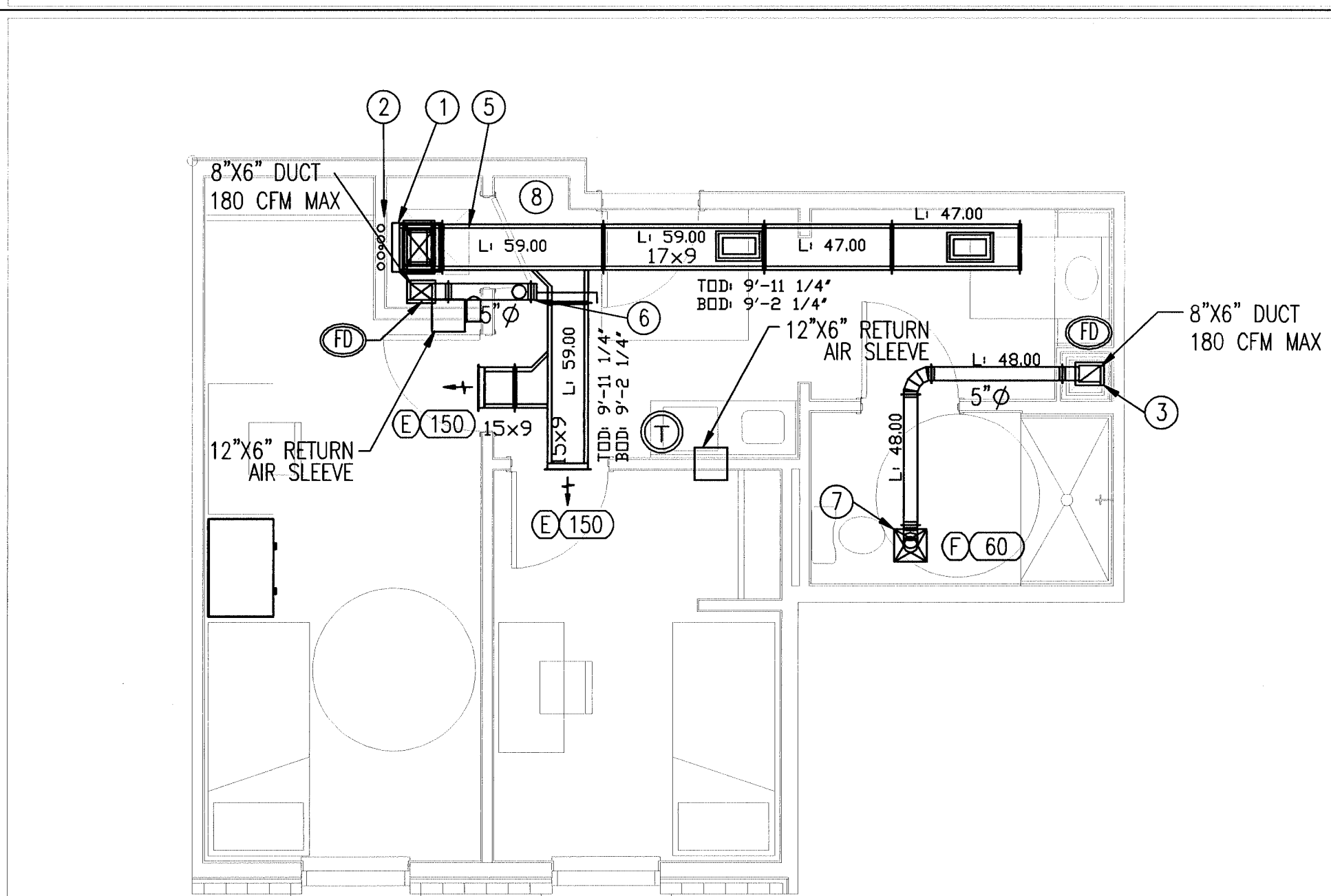
©2011 PROJECTS/LOGO/YES LLC LOGO.BMP



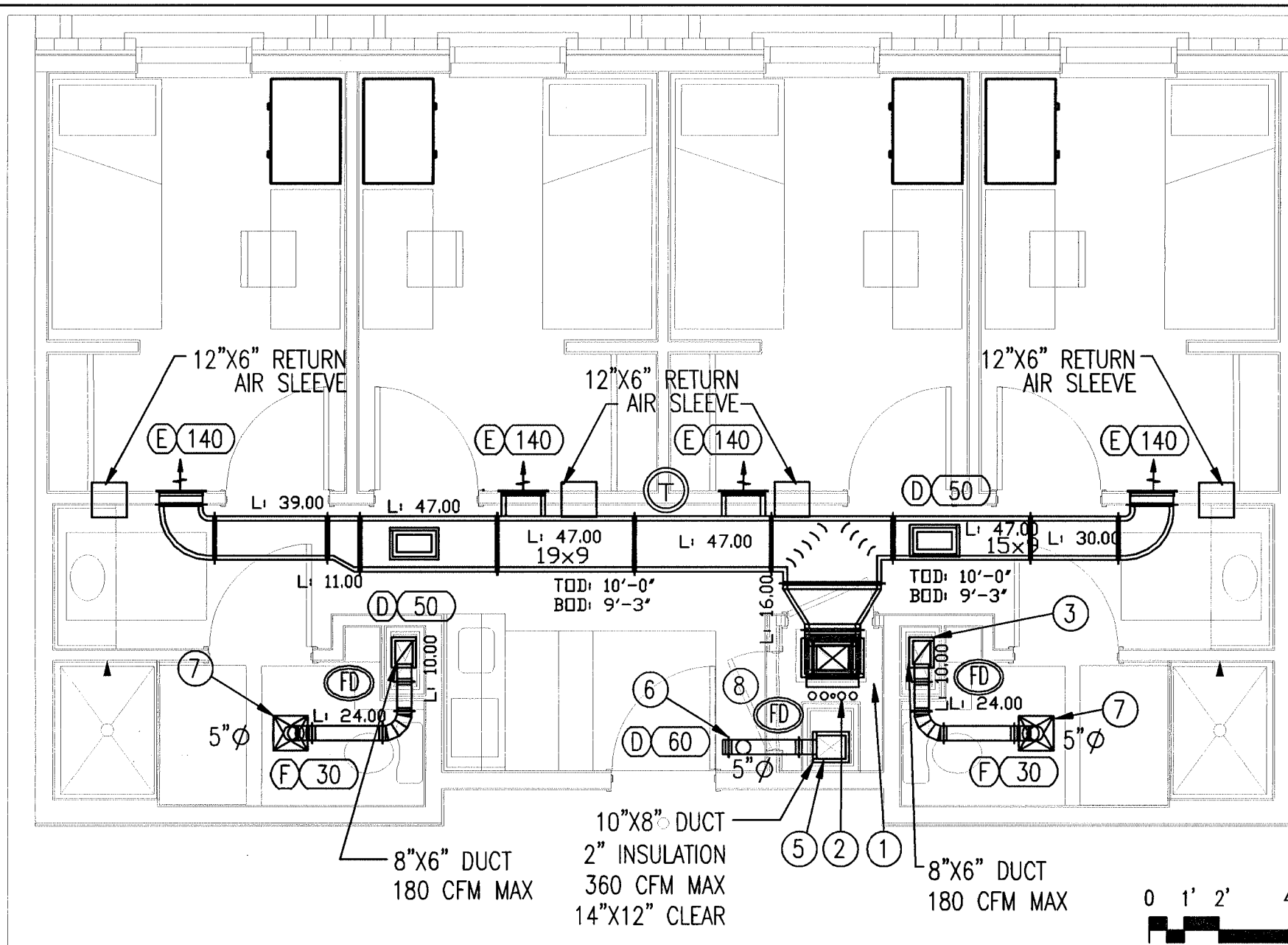
Record Drawings



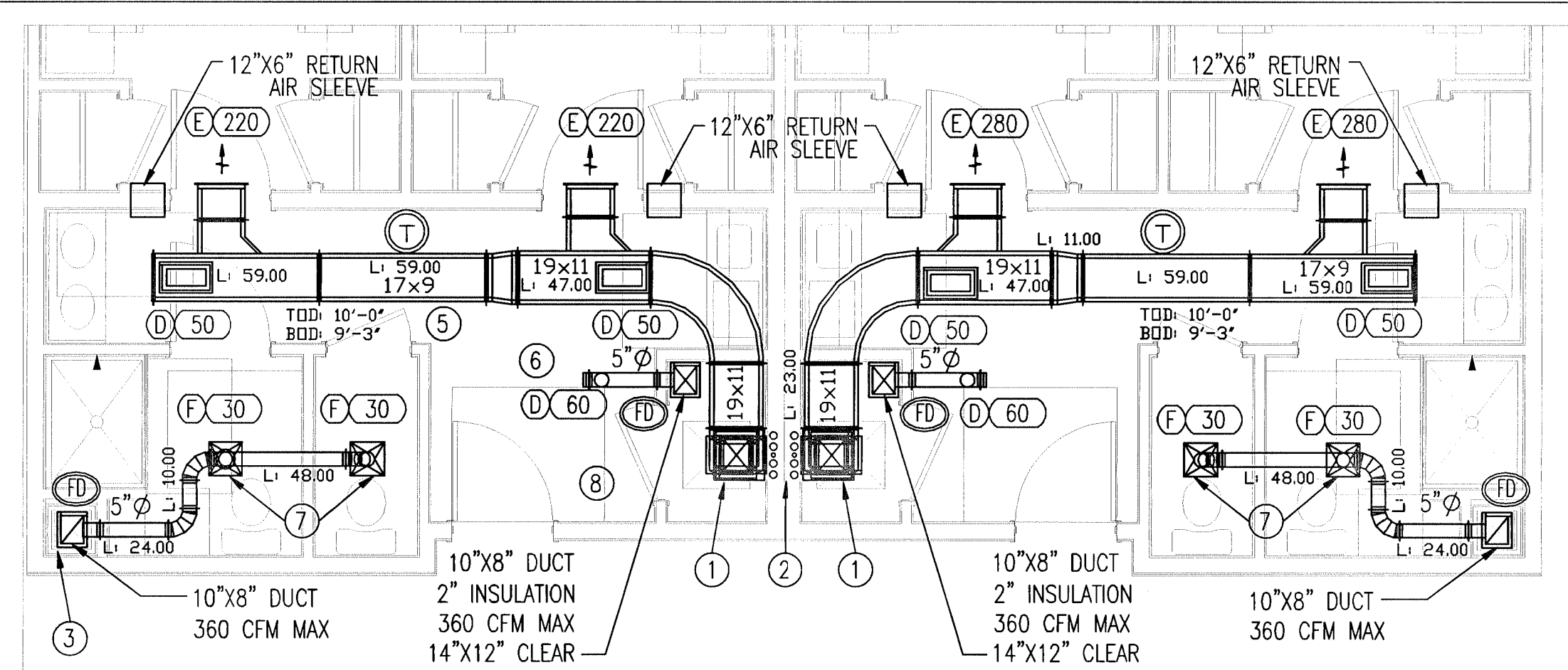
(2BD-APT)
2 BEDROOM SINGLE / 1 BATH UNIT
PRIVATE
779 SF



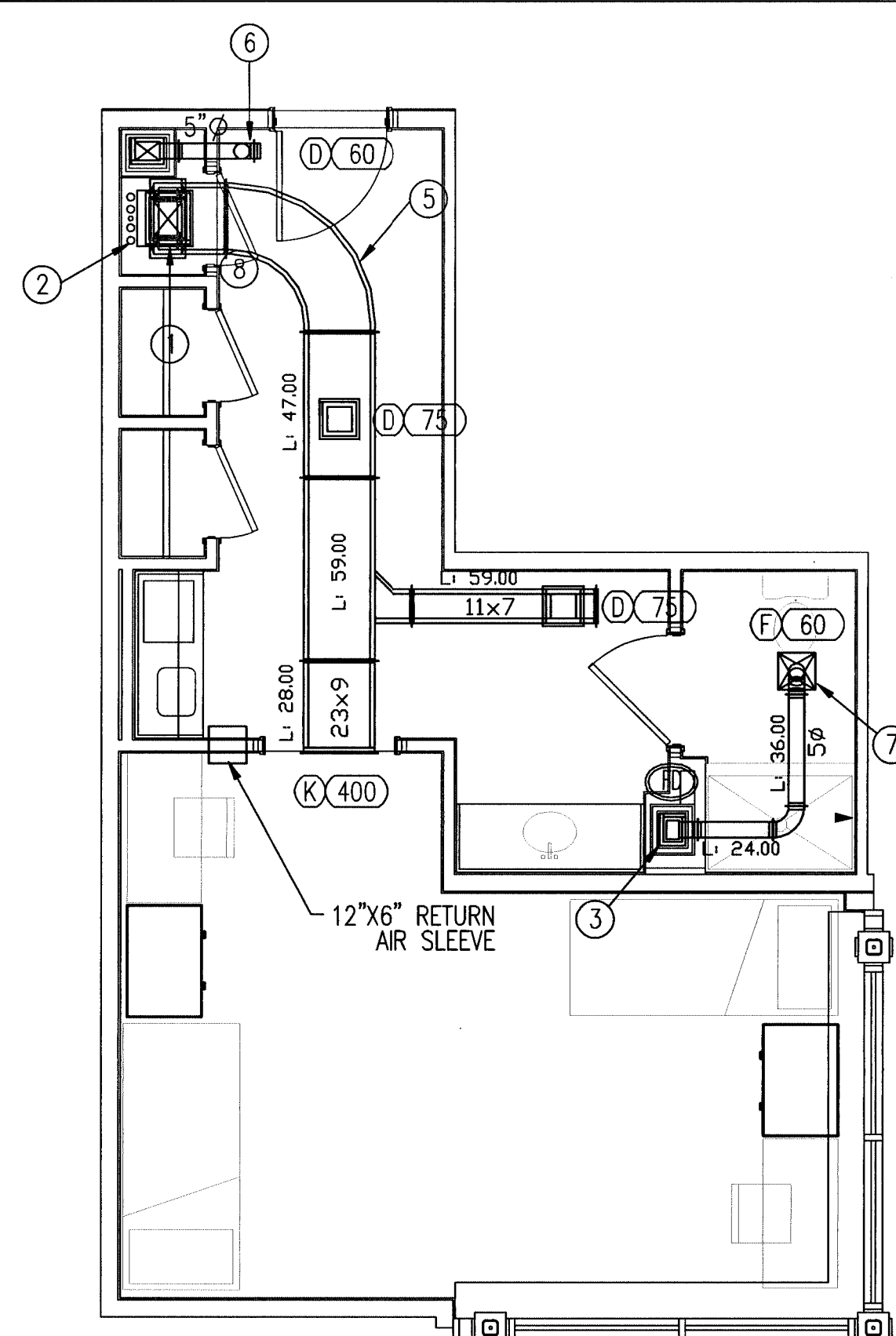
(2BD-P-ADA)
2 BEDROOM PRIVATE / 1 BATH UNIT
PRIVATE
510 SF



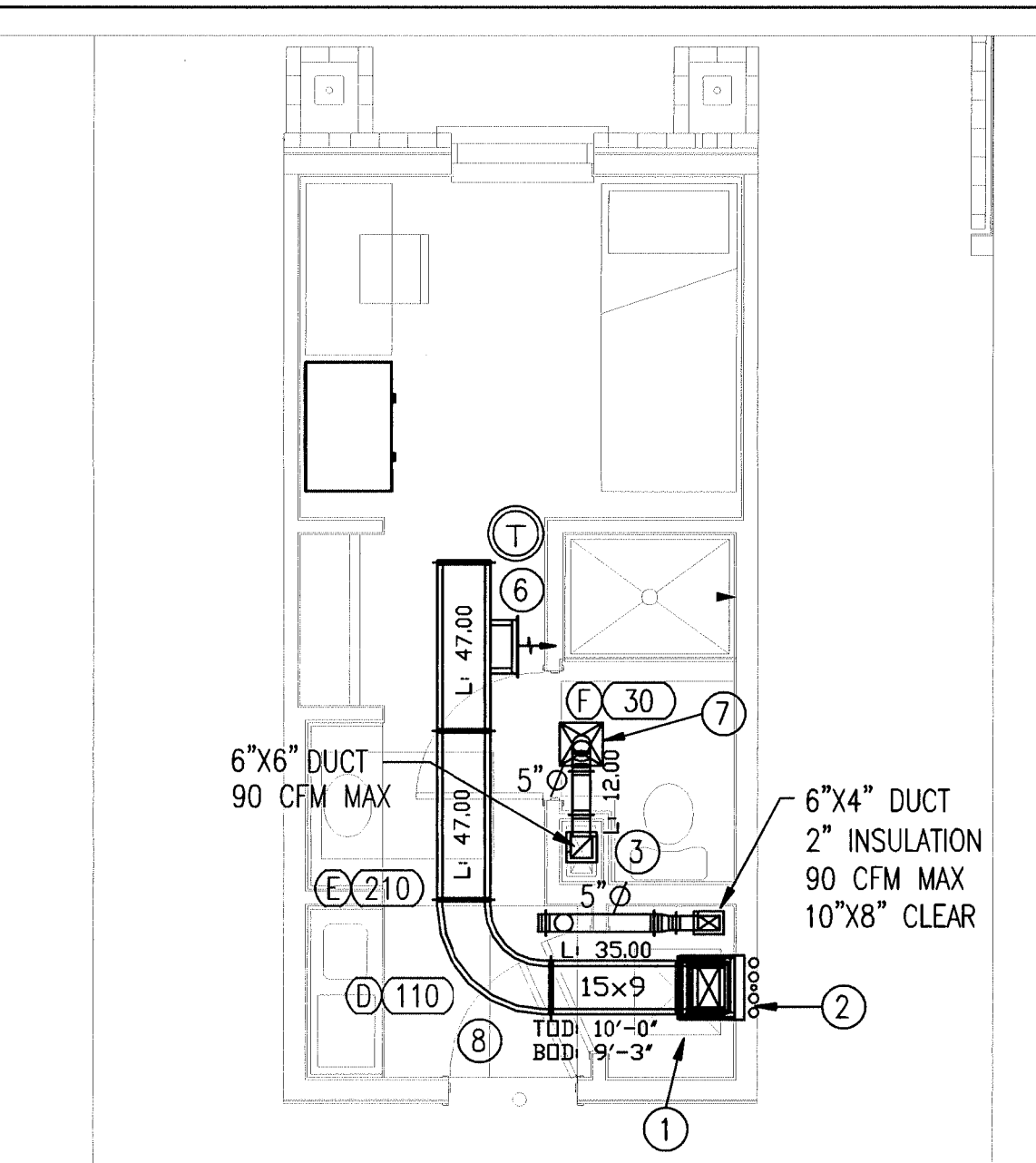
(4BD-P)
4 BEDROOM SINGLE / 2 BATH UNIT
PRIVATE
779 SF



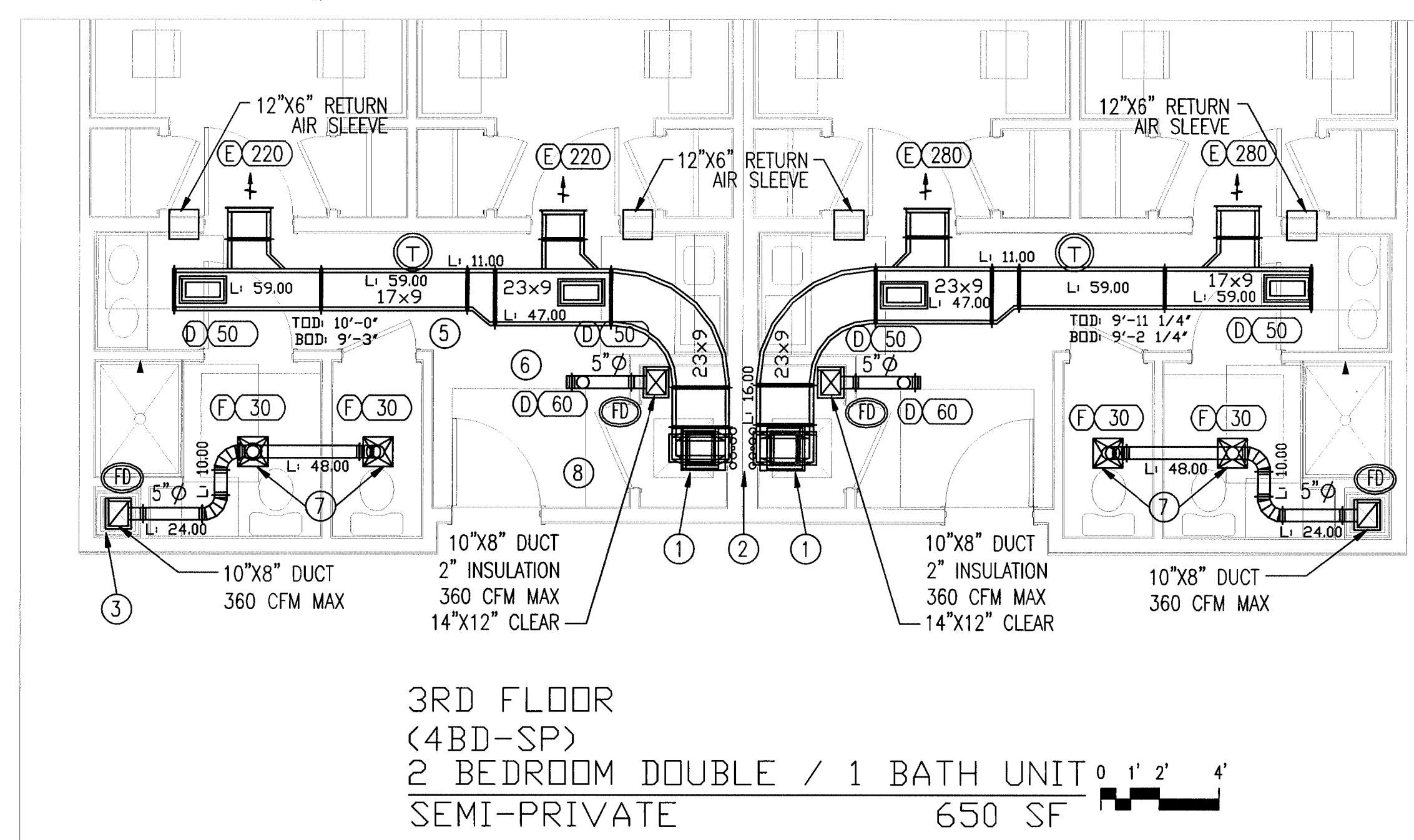
(4BD-SP)
2 BEDROOM DOUBLE / 1 BATH UNIT
SEMI-PRIVATE
650 SF



(2BD-APT)
2 BEDROOM SINGLE / 1 BATH UNIT
PRIVATE
779 SF

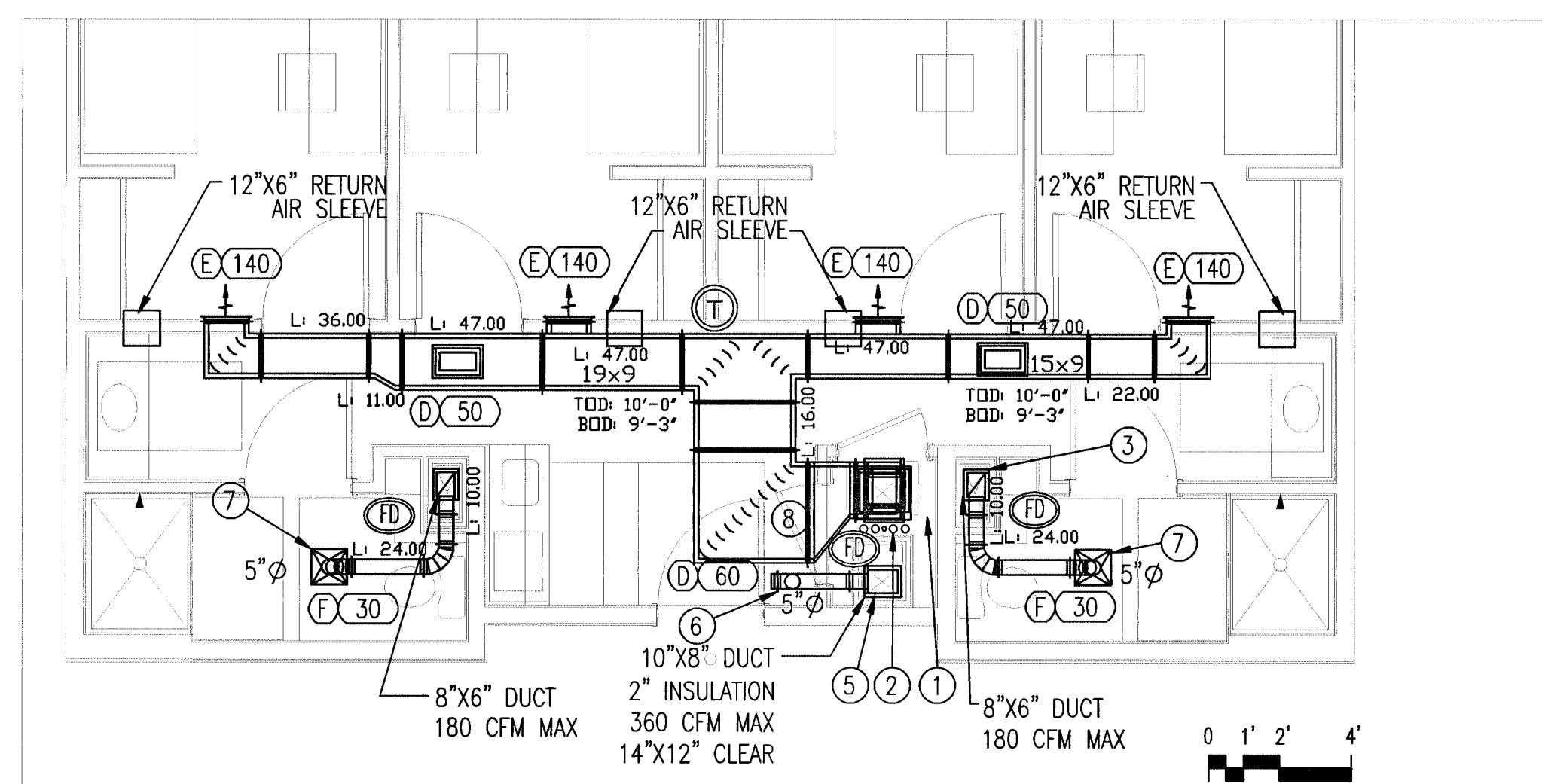


(1BD-P)
1 BEDROOM SINGLE / 1 BATH UNIT
PRIVATE
242 SF



3RD FLOOR
(4BD-SP)
2 BEDROOM DOUBLE / 1 BATH UNIT
SEMI-PRIVATE
650 SF

THIS SECTION APPLIES TO THE 3RD LEVEL ONLY



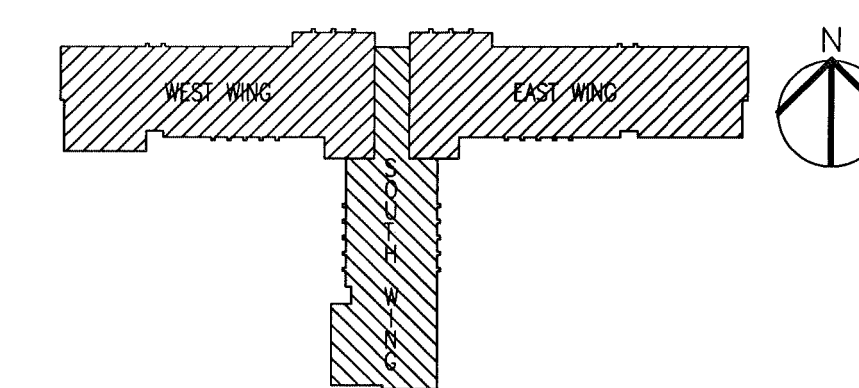
3RD FLOOR
(4BD-P)
4 BEDROOM SINGLE / 2 BATH UNIT
PRIVATE
779 SF

THIS SECTION APPLIES TO THE 3RD LEVEL ONLY

KEY NOTES

- 1 VERTICAL STACK FAN COIL UNIT.
- 2 HYDRONIC RISERS.
- 3 EXHAUST AIR RISER.
- 4 HYDRONIC RISERS.
- 5 SUPPLY AIR DUCT.
- 6 SIDEWALL OUTDOOR AIR REGISTER.
- 7 TOILET EXHAUST.
- 8 RETURN THROUGH LOUVERED DOOR.

KEY MAP



MECHANICAL LEGEND

- (T) TEMPERATURE SENSOR SEE SPECIFICATIONS.
- (S) SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- (R) RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- (V) TURNING VANES
- (D) DUCT TRANSITION
- (R) RETURN DUCT W/SMOKE/FIRE DAMPER
- (X7) INDICATES DETAIL/ LOCATION NUMBER
- (X1.1) INDICATES DRAWING TO REFERENCE

9726 TUCKER CYPRESS
HOUSTON, TX 77095

Ambrose and House HADP
2323 South Shepherd Suite 1014
Houston, Texas 77019

Record Drawings

NEW STUDENT HOUSING PROJECT

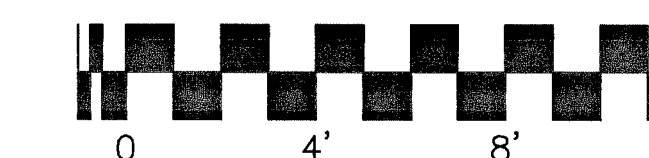
BLINN COLLEGE
BRENHAM, TX

PROJECT RECORDS

Eagle Contracting
As Built

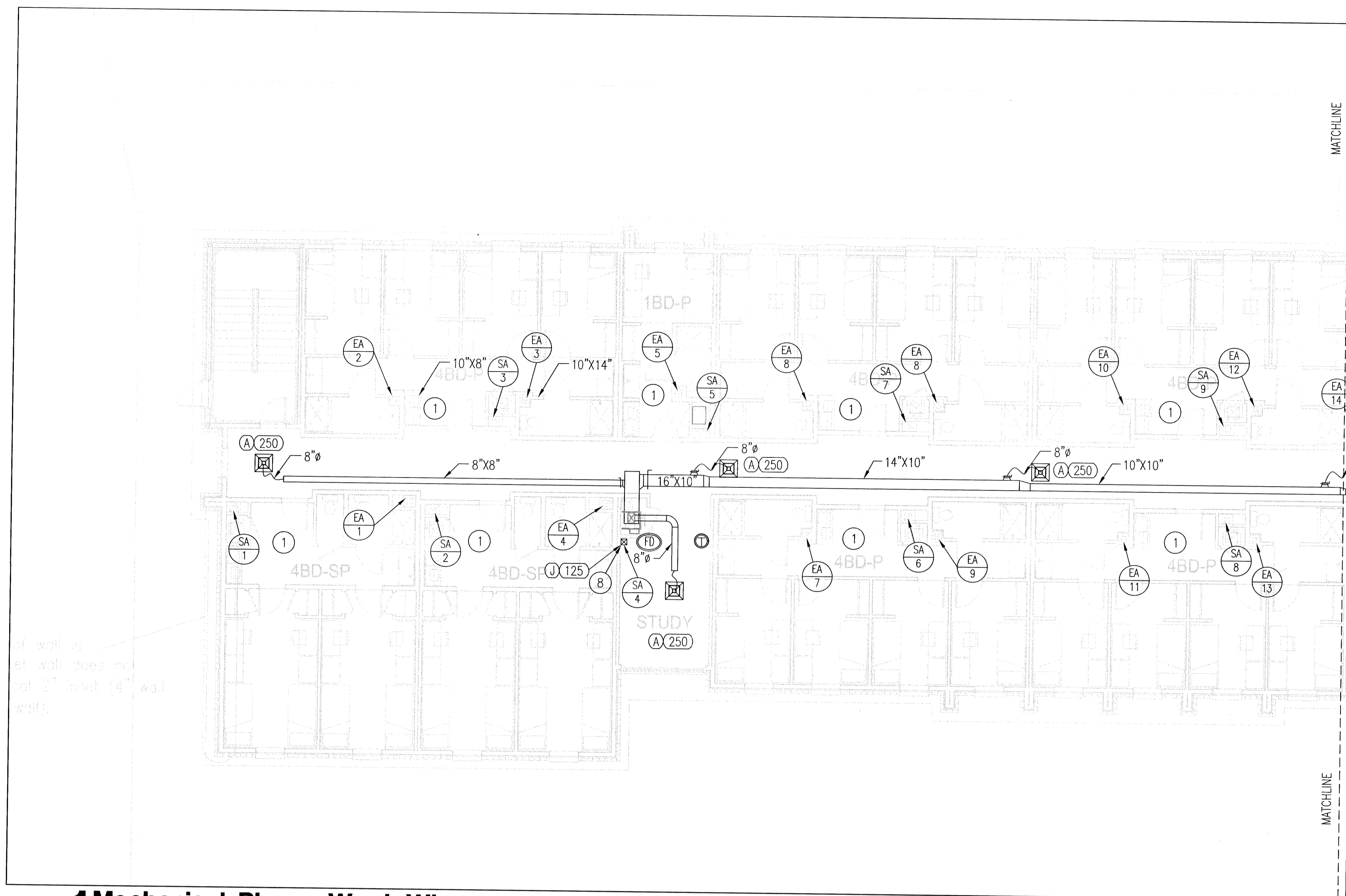
DATE	REV.
1/20/11	SHOP DRAWING
4/12/11	REV.SHOP DWGS

TYPICAL MECHANICAL PLANS – TYPICAL ROOM TYPES



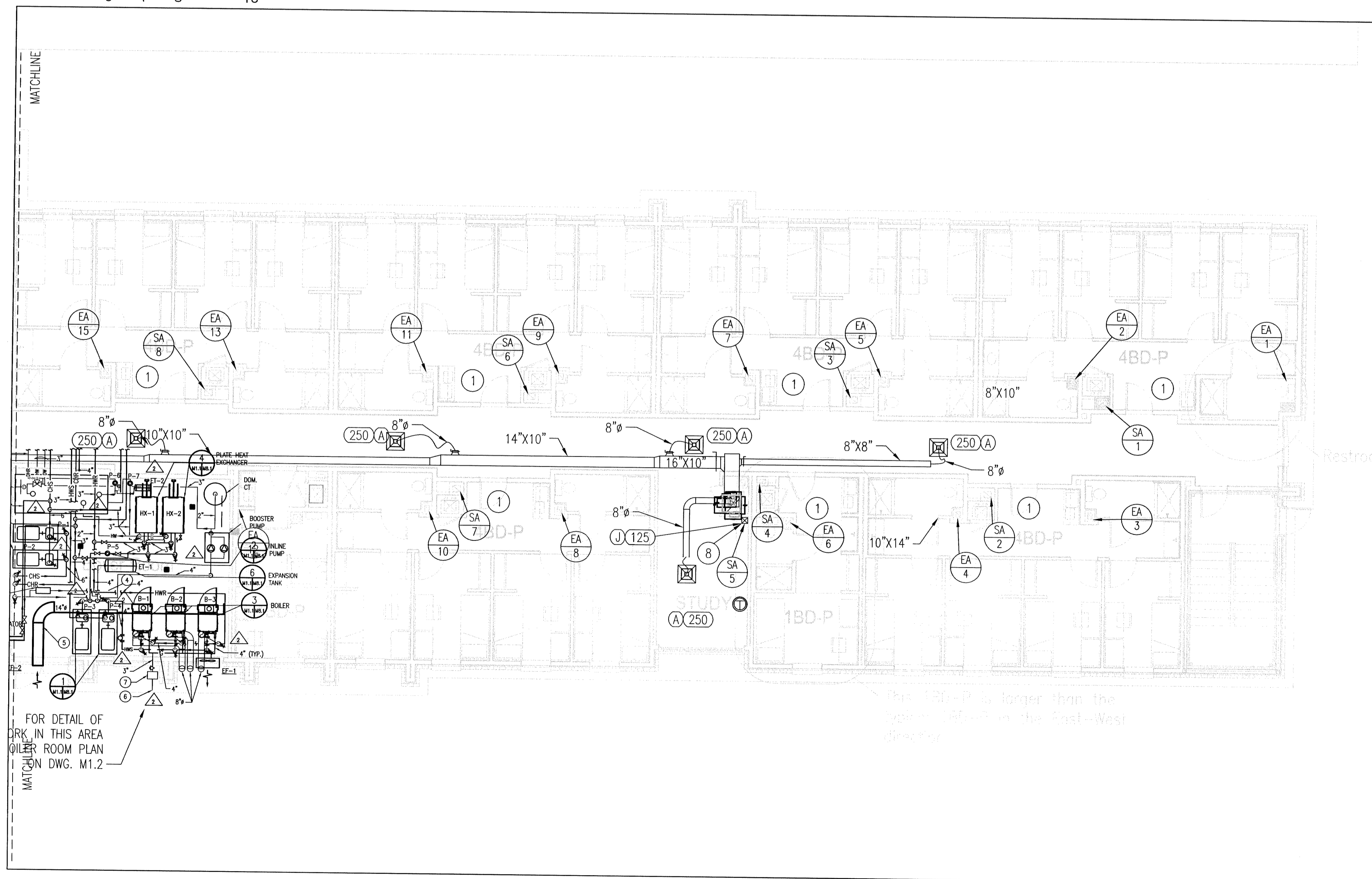
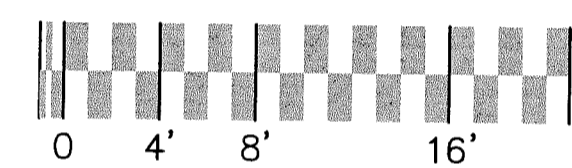
1/4"=1'-0"

M5.2



1 Mechanical Plan - West Wing

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



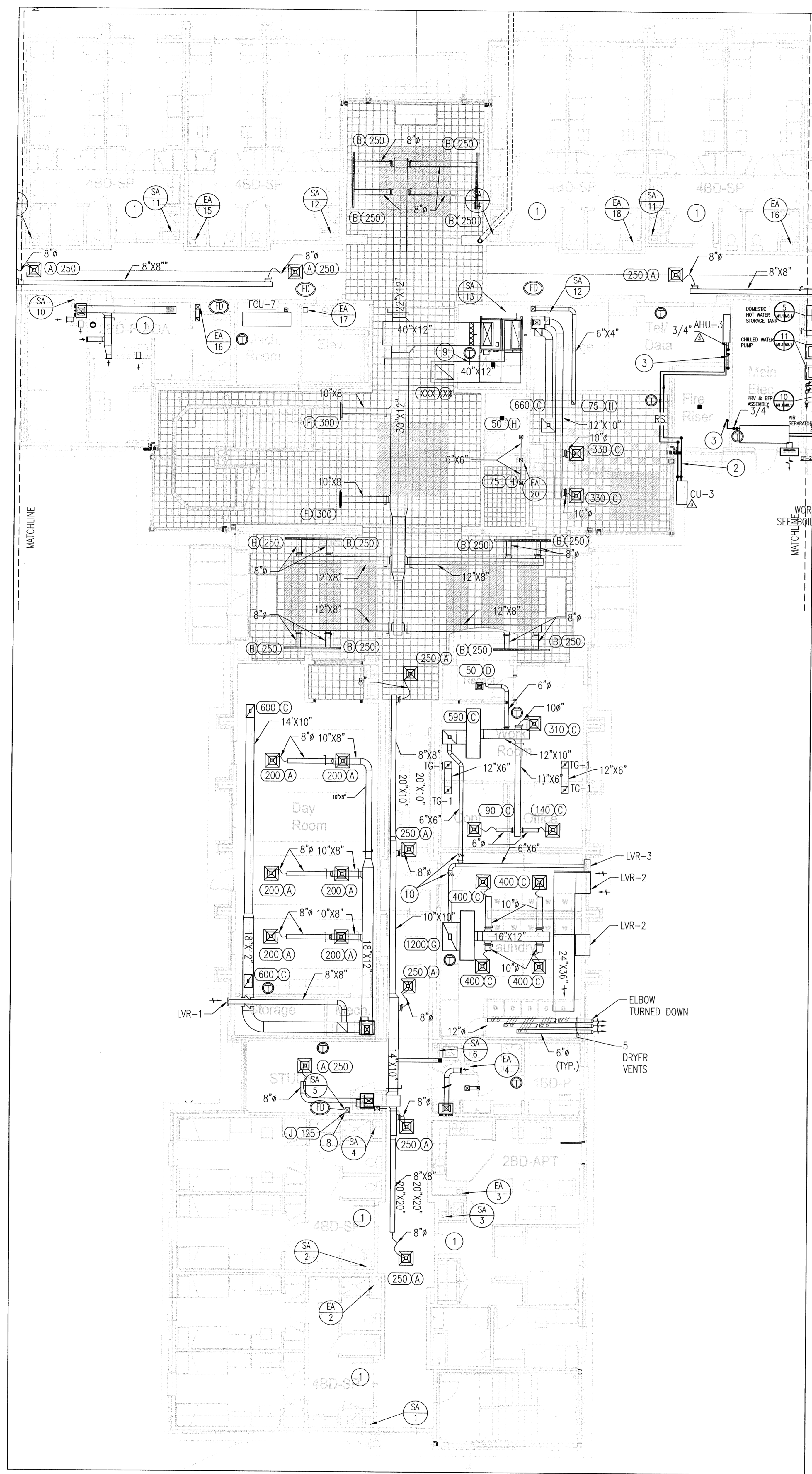
2 Mechanical Plan - East Wing

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

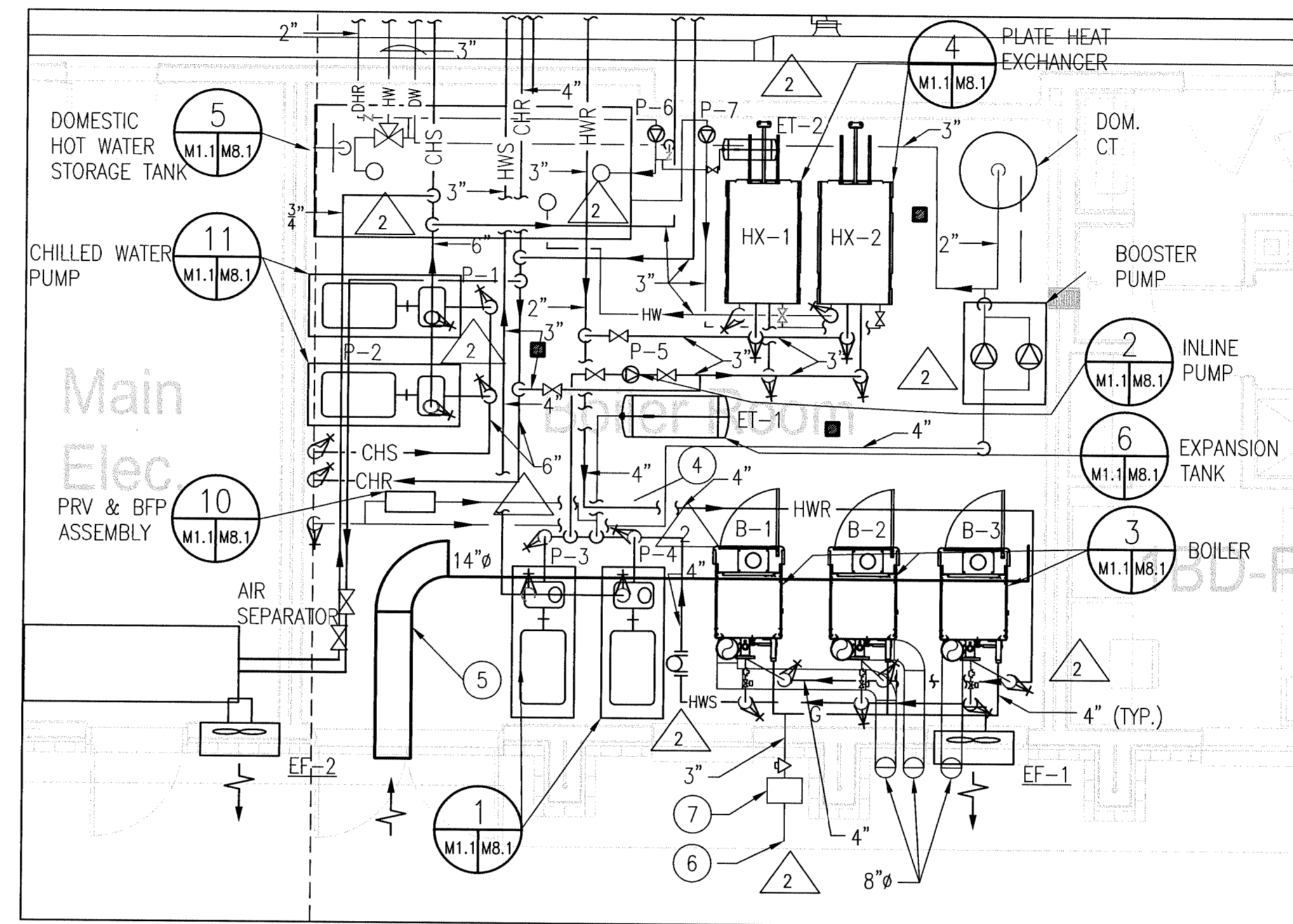


- 1 MECH. KEY NOTES**
- SEE SHEET M4.0 FOR DUCTWORK SIZES AND AIR FLOW IN THIS AREA.
 - RS AND RL PIPING UNDERGROUND TO CONDENSING UNIT.
 - ROUTE CONDENSATE PIPING TO FLOOR DRAIN.
 - AIR SEPARATOR. SEE DETAIL
 - 14" COMBUSTION AIR DUCT. CONNECT TO EACH BOILER VIA A 8" DUCT.
 - UNDERGROUND GAS SERVICE FROM UTILITY.
 - GAS PRESSURE REGULATOR.
 - PROVIDE FIRE DAMPER AT FIRE PARTITION FROM ABOVE. INSTALL SUPPLY AIR REGISTER IN LAY IN CEILING.
 - PROVIDE TEMPERATURE SENSOR IN RETURN AIR DUCT.
 - PROVIDE BACKDRAFT DAMPER IN OUTDOOR AIR DUCT. BALANCE EACH BRANCH TO 60 CFM OUTDOOR AIR.
- KEY MAP**
-
- MECHANICAL LEGEND**
- TEMPERATURE SENSOR SEE SPECIFICATIONS.
 - SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
 - RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
 - TURNING VANES
 - DUCT TRANSITION
 - RETURN DUCT W/SMOKE/FIRE DAMPER
 - VOLUME DAMPER
 - FIRE DAMPER
 - SMOKE/FIRE DAMPER
- INDICATES DETAIL/ LOCATION NUMBER
 INDICATES DRAWING TO REFERENCE

See Eagle contracting
As Built Drawings



3 Mechanical Plan - South Wing and Lobby
 SCALE: 1/8" = 1'-0"
 0 4 8 16

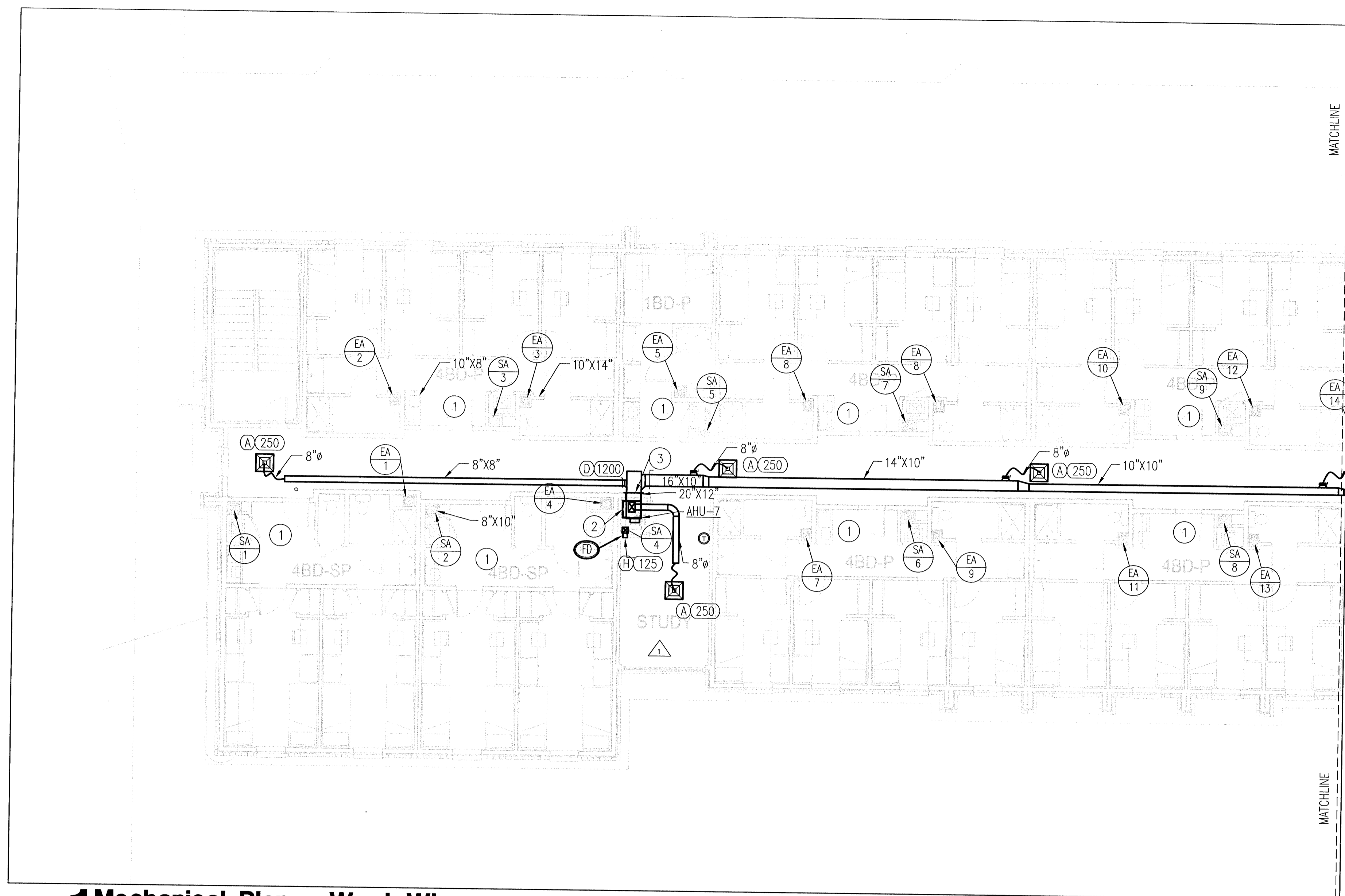


4 BOILER ROOM 121 ENLARGED PLAN
 SCALE: 1/4" = 1'-0"

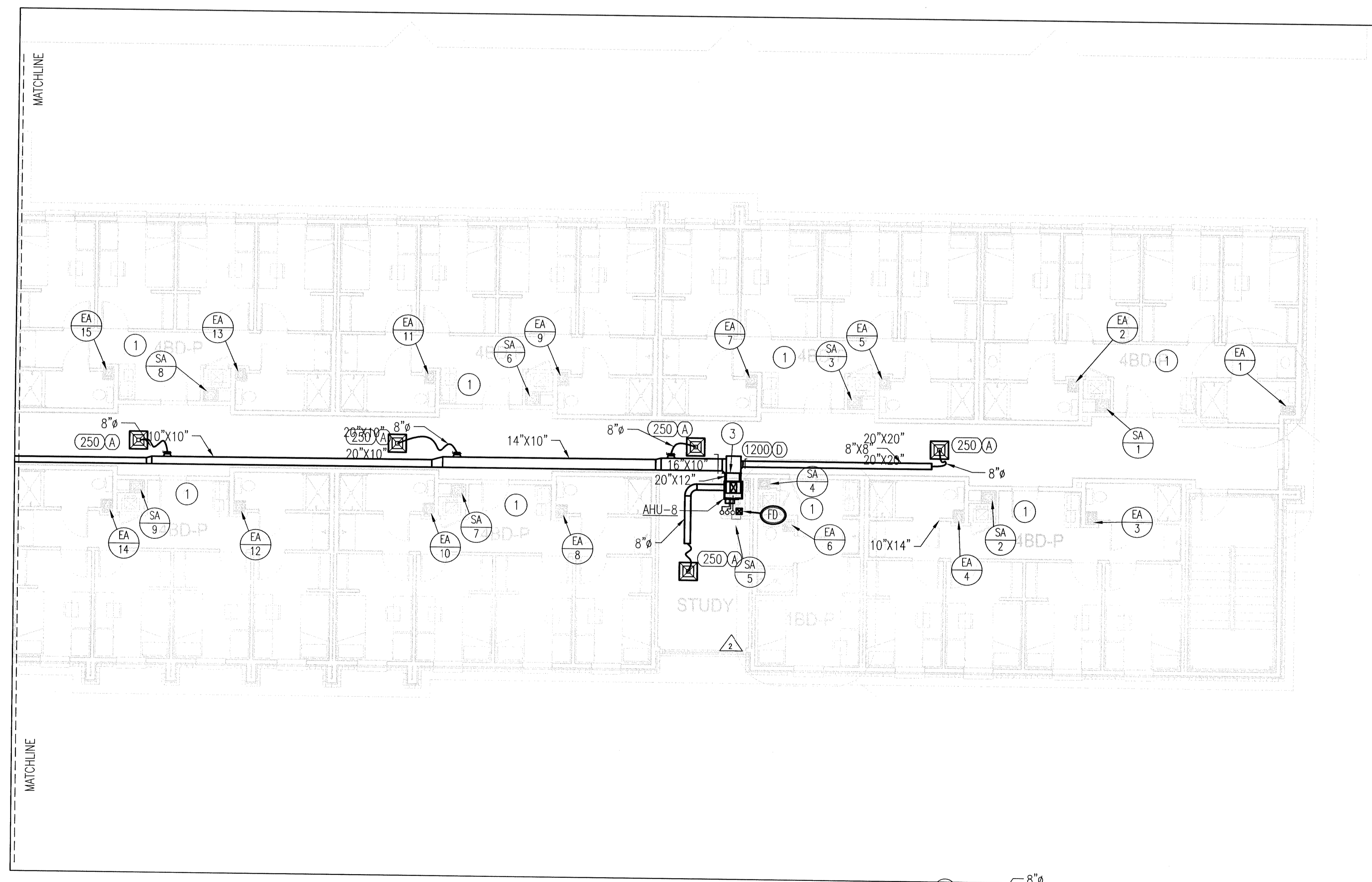
- 1 MECH. KEY NOTES**
- SEE SHEET M4.0 FOR DUCTWORK SIZES AND AIR FLOW IN THIS AREA.
 - RS AND RL PIPING UNDERGROUND TO CONDENSING UNIT.
 - ROUTE CONDENSATE PIPING TO FLOOR DRAIN.
 - AIR SEPARATOR. SEE DETAIL.
 - 14" COMBUSTION AIR DUCT. CONNECT TO EACH BOILER VIA A 8" DUCT.
 - UNDERGROUND GAS SERVICE FROM UTILITY.
 - GAS PRESSURE REGULATOR.
 - PROVIDE FIRE DAMPER AT FIRE PARTITION FROM ABOVE. INSTALL SUPPLY AIR REGISTER IN LAY IN CEILING.
 - PROVIDE TEMPERATURE SENSOR IN RETURN AIR DUCT.
 - PROVIDE BACKDRAFT DAMPER IN OUTDOOR AIR DUCT. BALANCE EACH BRANCH TO 60 CFM OUTDOOR AIR.
- KEY MAP**
-
- MECHANICAL LEGEND**
- TEMPERATURE SENSOR SEE SPECIFICATIONS.
 - SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
 - RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
 - TURNING VANES
 - DUCT TRANSITION
 - RETURN DUCT W/SMOKE/FIRE DAMPER
 - TEMPERATURE SENSOR
 - VOLUME DAMPER
 - FIRE DAMPER
 - SMOKE/FIRE DAMPER
- X7 - INDICATES DETAIL/ LOCATION NUMBER
 X1.1 - INDICATES DRAWING TO REFERENCE

See Eagle contracting
 As Built Drawings

PROJECT RECORDS



1 Mechanical Plan - West Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

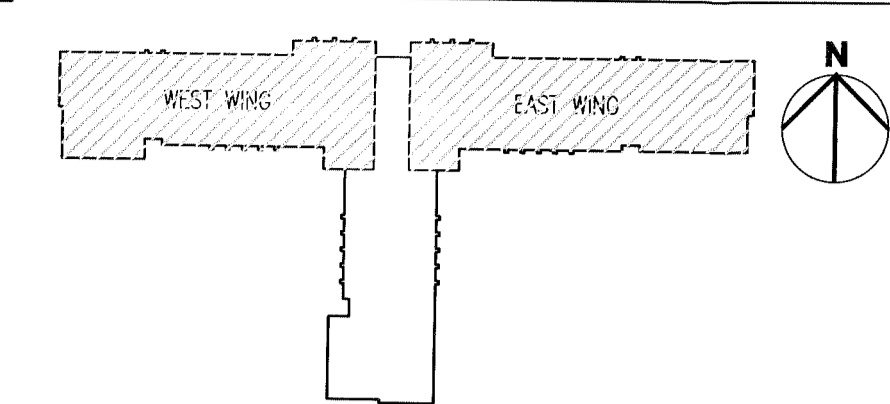


2 Mechanical Plan - East Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

MECH. KEY NOTES

- ① SEE DRAWING M4.0 FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- ② SEE AHU DETAIL.
- ③ 30"X24" RETURN AIR FILTER GRILLE ON WALL.

KEY MAP



MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- ⊞ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ∟ TURNING VANES
- ∟ DUCT TRANSITION
- ∟ RETURN DUCT W/SMOKE/FIRE DAMPER
- ∟ VOLUME DAMPER
- ∟ FIRE DAMPER
- ∟ SMOKE/FIRE DAMPER
- ⊙ X7 INDICATES DETAIL/ LOCATION NUMBER
- ⊙ X1.1 INDICATES DRAWING TO REFERENCE

See Eagle Contracting
 As Built Drawings

Record Drawings

New Student Housing Project
 Blinn College
 Brenham, Texas

MARSHALL
 ENGINEERING
 CORPORATION
 10030 MEDICAL BOW
 HOUSTON, TX 77054
 PHONE: (281) 852-4131
 FAX: (281) 852-4831
 TYPE: F-5086
 C-SCALE

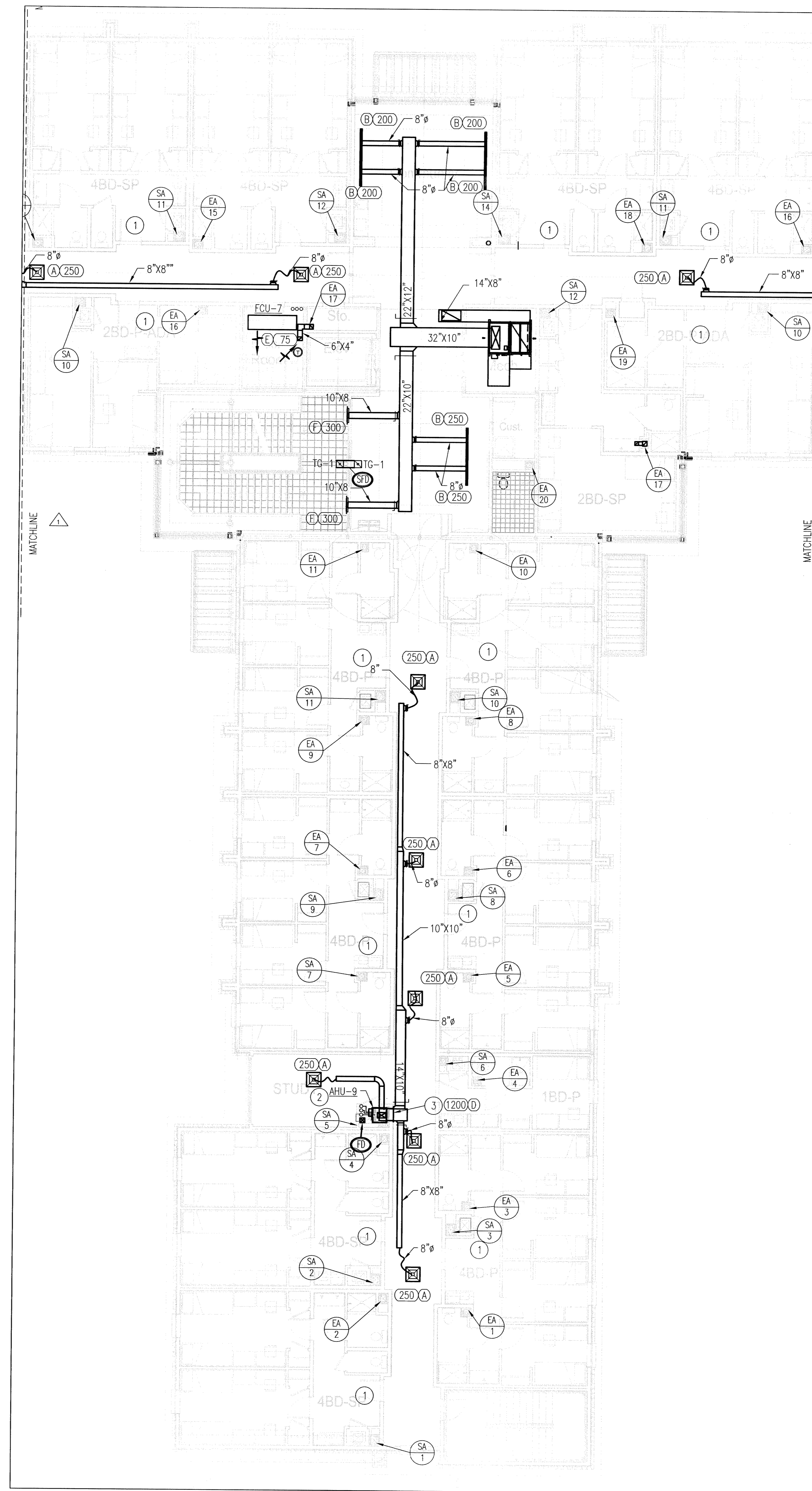
RECORD DRAWINGS
 9 / 27 / 11
 ISSUED FOR CONSTRUCTION
 8 / 10 / 10

APPENDIX #3
 1/22/10
 ASI #3 RFI #14
 10/19/10

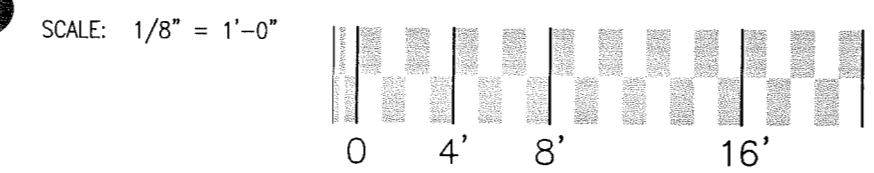
PROJECT RECORDS

M2.1

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3 Mechanical Plan - South Wing and Lobby

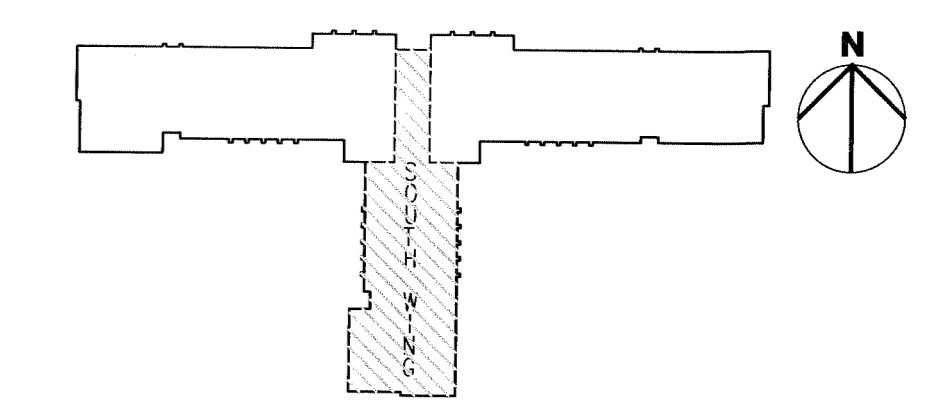


Mechanical Second Floor Plan - South Wing and Lobby
Scale: As Indicated

MECH. KEY NOTES

- ① SEE DRAWING M4.0 FOR AIRFLOW, DUCTWORK SIZES, AND DETAILS FOR TYPICAL ROOM AREAS.
- ② SEE AHU DETAIL.
- ③ 30"x24" RETURN AIR FILTER GRILLE ON WALL.

KEY MAP



MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- ⊞ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ⊞ TURNING VANES
- ⊞ DUCT TRANSITION
- ⊞ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊞ VOLUME DAMPER
- ⊞ FIRE DAMPER
- ⊞ SMOKE/FIRE DAMPER
- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

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As Built Drawings

PROJECT RECORDS

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MARSHALL ENGINEERING CORPORATION
18330 MEDINA BOW
HOUSTON, TX 77058
PHONE: (281)852-4131
FAX: (281)852-4631
TYPE: F-588
E-MAIL: mace@mecc.com

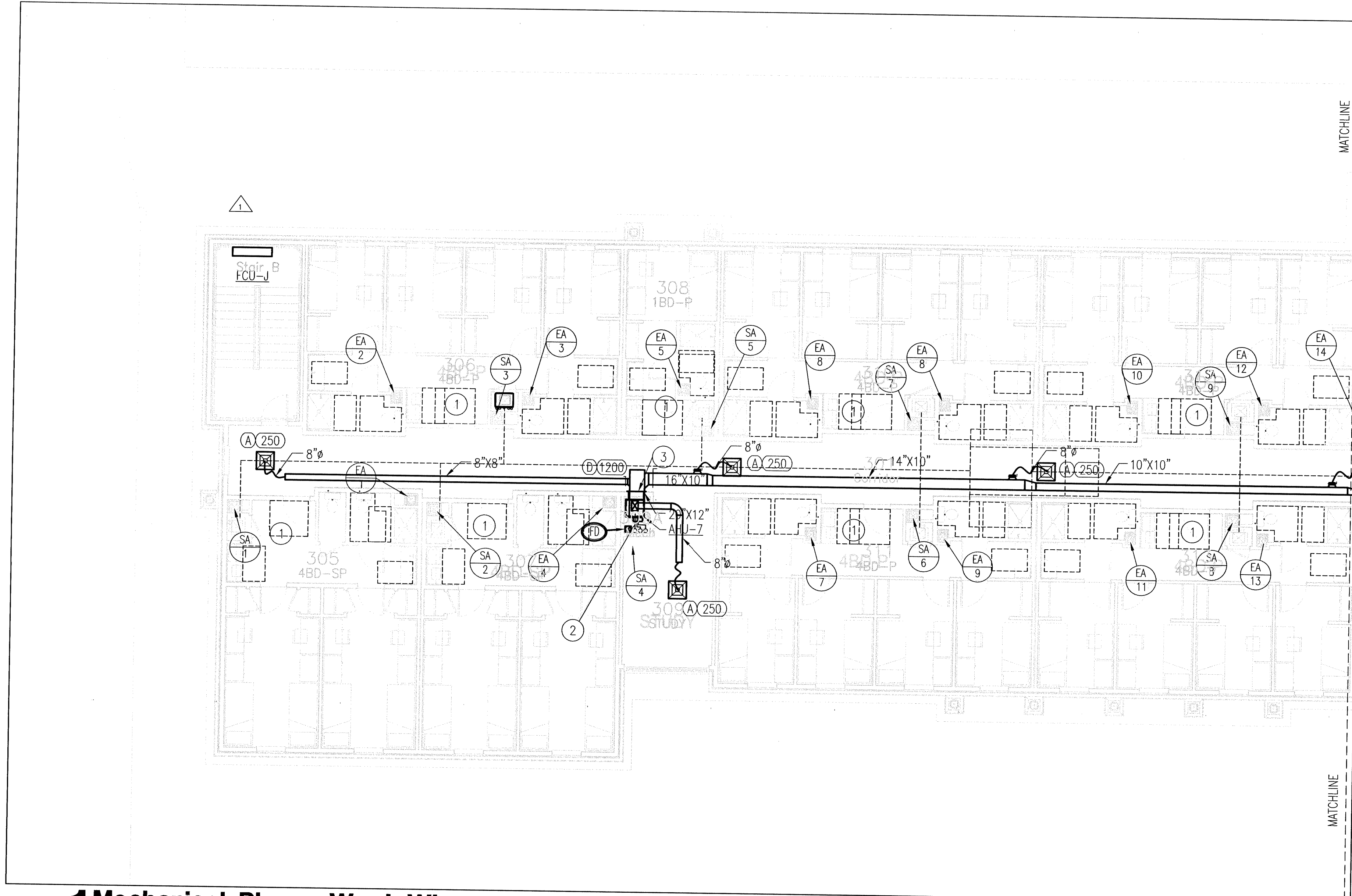
Record Drawings

New Student Housing Project
Blinn College
Brenham, Texas

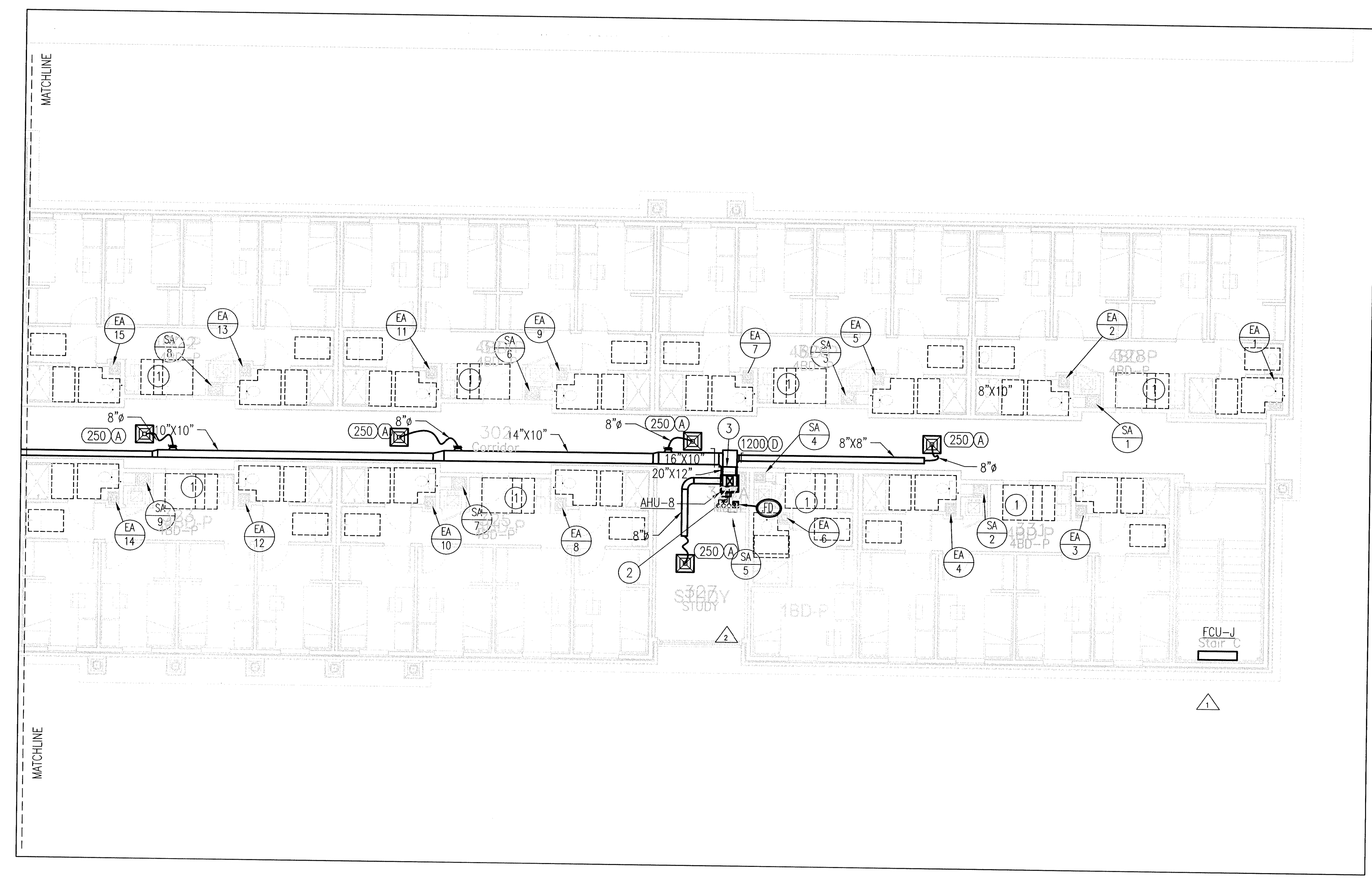
RECORD DRAWINGS
9 / 27 / 11
ISSUED FOR CONSTRUCTION
8 / 10 / 10

APPENDIX #5
1/22/10

M2.2



1 Mechanical Plan - West Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

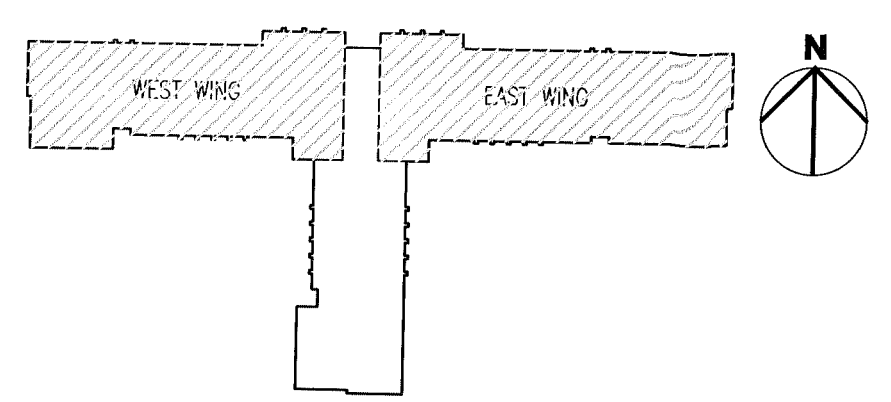


2 Mechanical Plan - East Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

MECH. KEY NOTES

- 1 SEE SHEET M4.0 FOR DUCTWORK SIZES AND AIR FLOW IN THIS AREA.
- 2 SEE AHU DETAIL FOR ADDITIONAL INFORMATION.
- 3 30X24 RETURN AIR FILTER GRILLE ON WALL.
- 4 FIELD VERIFY UNIT DIMENSIONS PRIOR TO PURCHASE.

KEY MAP



MECHANICAL LEGEND

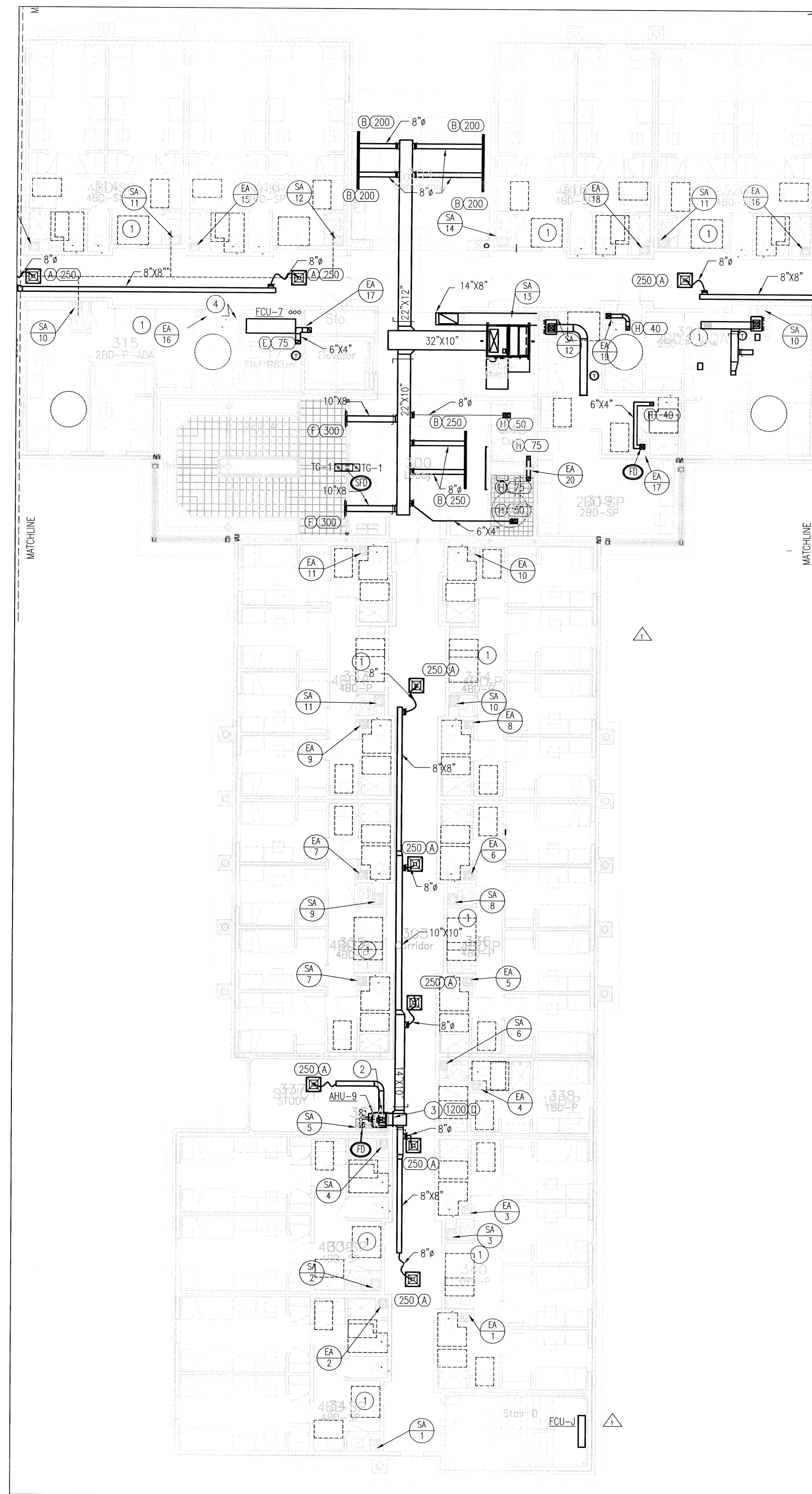
- (T) TEMPERATURE SENSOR SEE SPECIFICATIONS.
- (S) SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- (R) RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- (TV) TURNING VANES
- (DT) DUCT TRANSITION
- (RD) RETURN DUCT W/SMOKE/FIRE DAMPER
- (V) VOLUME DAMPER
- (FD) FIRE DAMPER
- (SP) SMOKE/FIRE DAMPER
- (X7) INDICATES DETAIL/ LOCATION NUMBER
- (X1.1) INDICATES DRAWING TO REFERENCE

Mechanical Third Floor Plan - West and East Wings
 Scale: As Indicated

See Eagle contracting
 AS Built Drawings

PROJECT RECORDS

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 2323 South Shepherd Suite 1014 • Houston, Texas 77019
MARSHALL ENGINEERING CORPORATION
 10530 MEDICAL BOW
 HOUSTON, TX 77036
 PHONE: (281) 252-4131
 FAX: (281) 252-4631
 E-MAIL: mrc@mecc.com
Record Drawings
 New Student Housing Project
 Blinn College
 Brenham, Texas
 RECORD DRAWINGS
 9 / 27 / 11
 ISSUED FOR CONSTRUCTION
 8 / 10 / 10
 APPENDIX #3
 1/22/10
 ASI #3 RFI #4
 10/14/10
M3.1



3 Mechanical Plan - South Wing and Lobby

SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

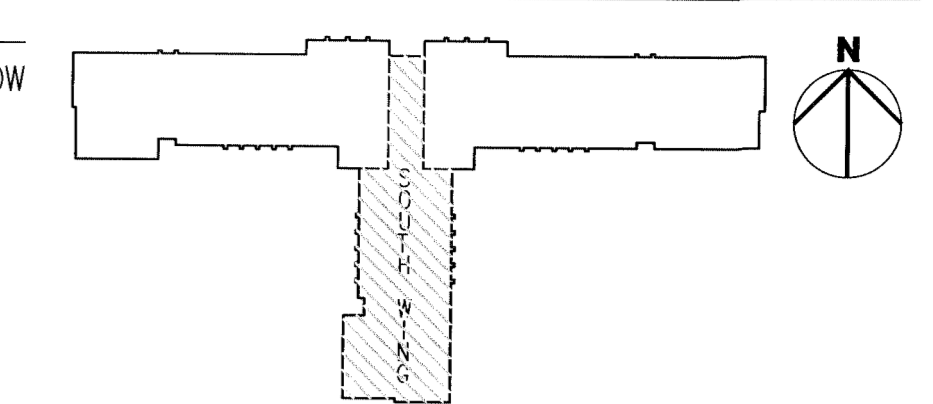
Mechanical Third Floor Plan - South Wing and Lobby

Scale: As Indicated

MECH. KEY NOTES

- 1 SEE SHEET M4.0 FOR DUCTWORK SIZES AND AIR FLOW IN THIS AREA.
- 2 SEE AHU DETAIL FOR ADDITIONAL INFORMATION.
- 3 30X24 RETURN AIR FILTER GRILLE ON WALL.
- 4 FIELD VERIFY UNIT DIMENSIONS PRIOR TO PURCHASE.

KEY MAP



MECHANICAL LEGEND

- ⊕ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ⊘ TURNING VANES
- ⊘ DUCT TRANSITION
- ⊘ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊘ VOLUME DAMPER
- ⊘ FIRE DAMPER
- ⊘ SMOKE/FIRE DAMPER
- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

See Eagle Contracting
 As Built Drawings

PROJECT RECORDS

Ambrose and House HADP
 2323 South Shepherd Suite 1014 · Houston, Texas 77019

MARSHALL ENGINEERING CORPORATION
 19630 MEDICAL BOW MARBLE, TX 75848
 PHONE: (281) 952-4131 FAX: (281) 952-4631
 WWW: www.marshall-engineering.com E-MAIL: mecorp@aol.com

Record Drawings

New Student Housing Project
 Blinn College
 Brenham, Texas

RECORD DRAWINGS
 9 / 27 / 11
 ISSUED FOR CONSTRUCTION
 8 / 10 / 10

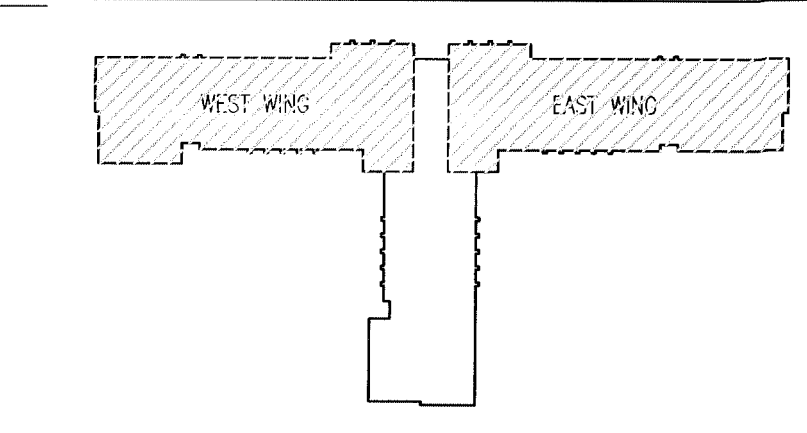
APPENDIX #5
 1/22/10

M3.2

KEY NOTES

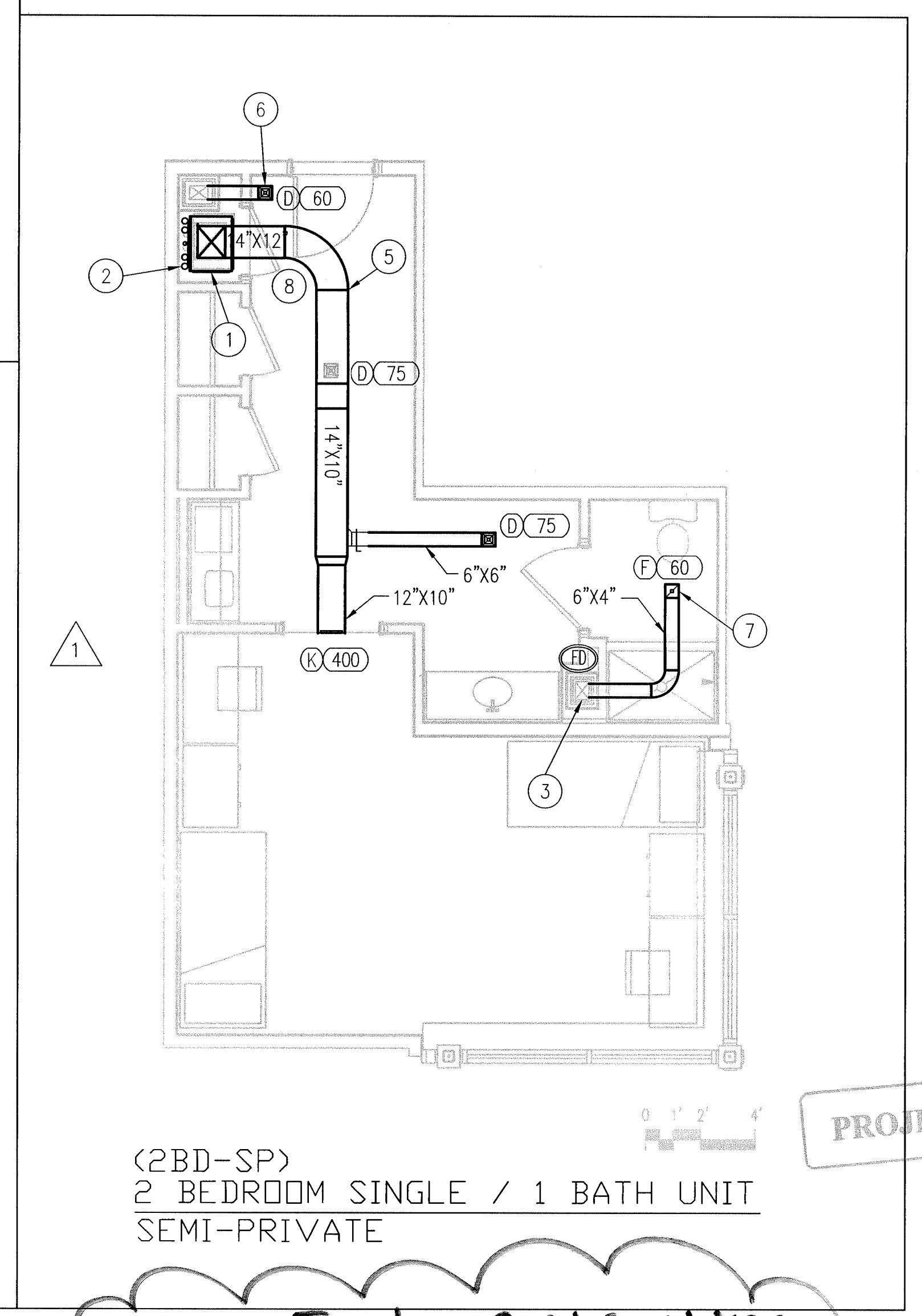
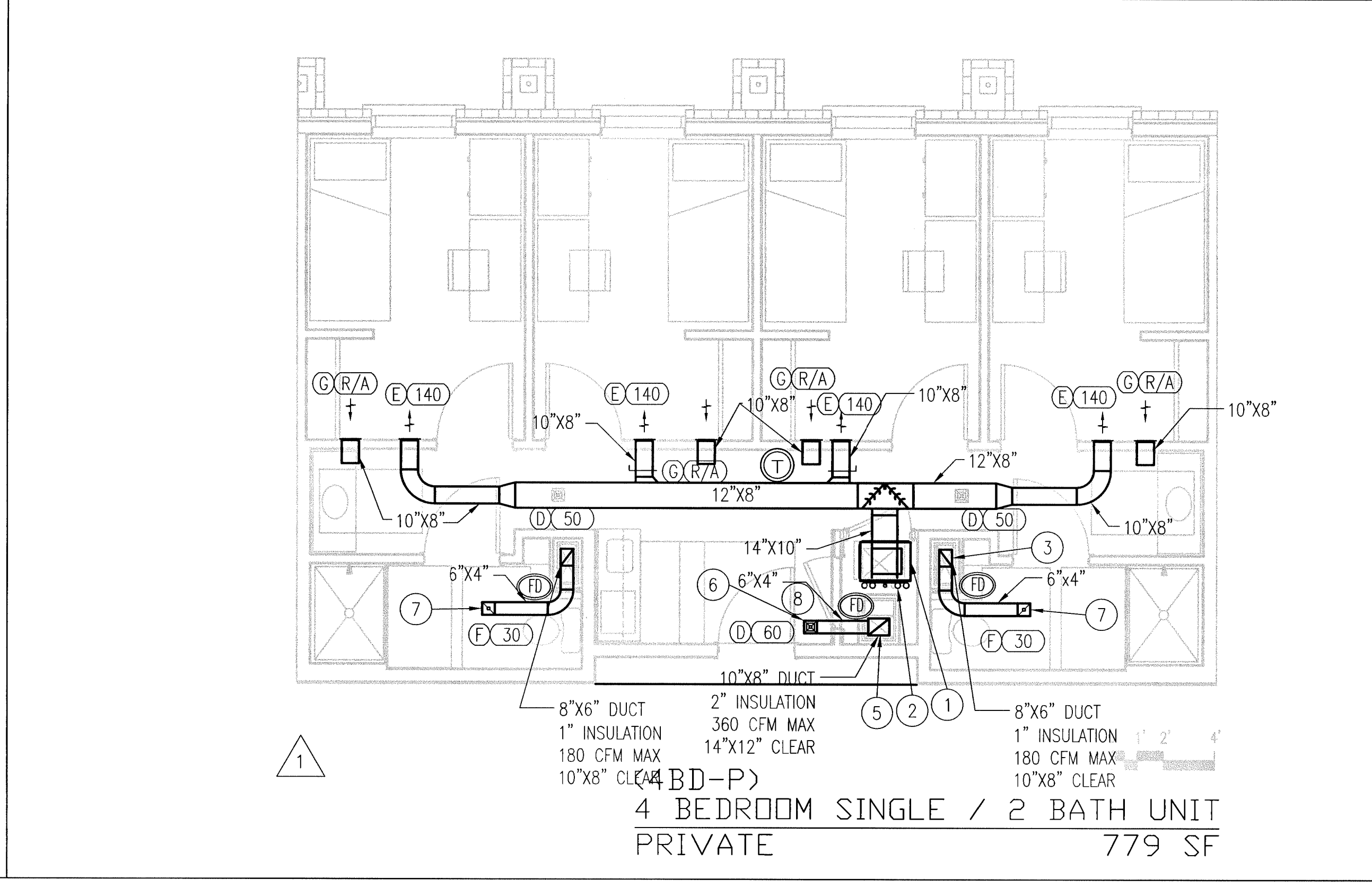
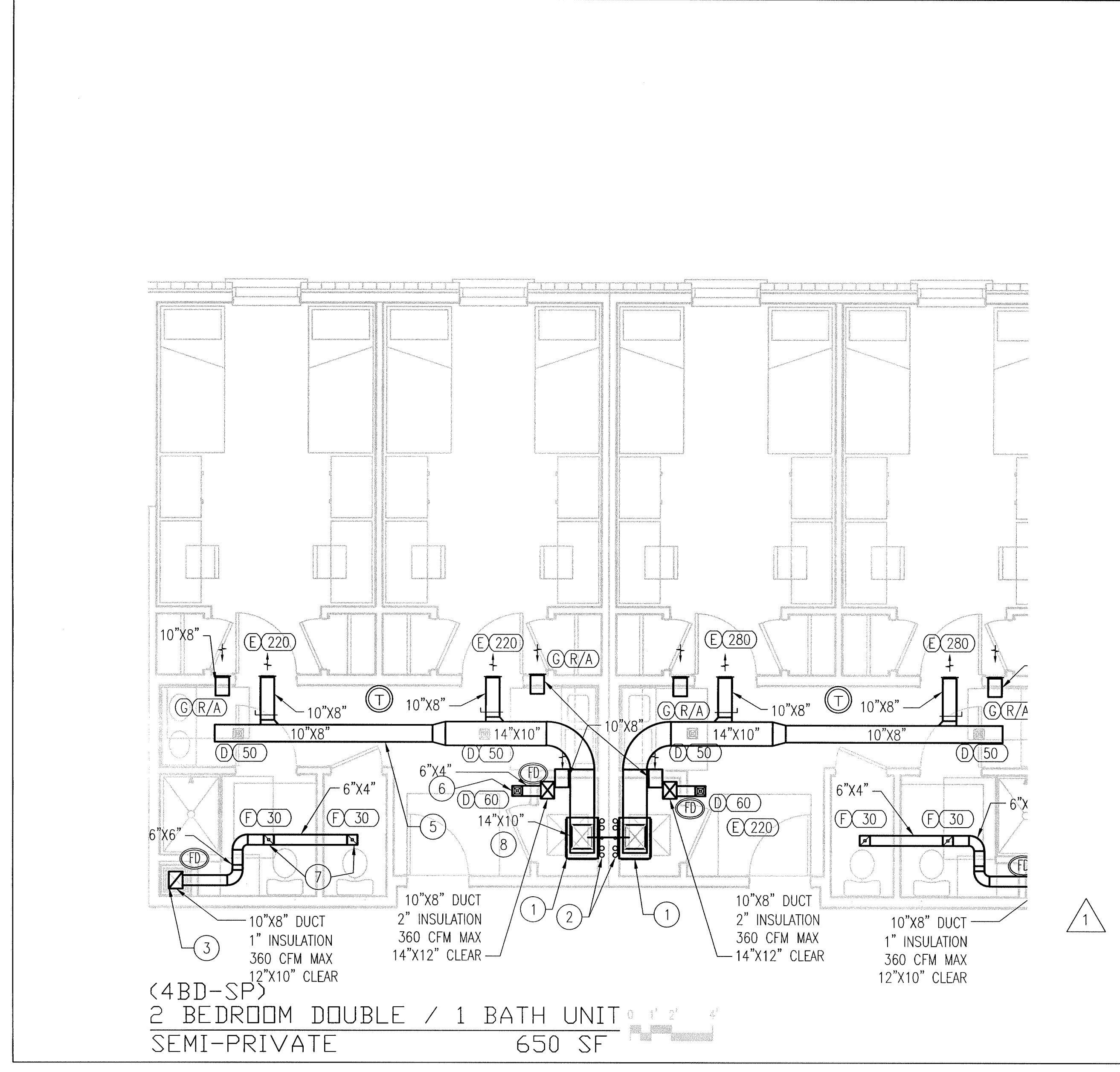
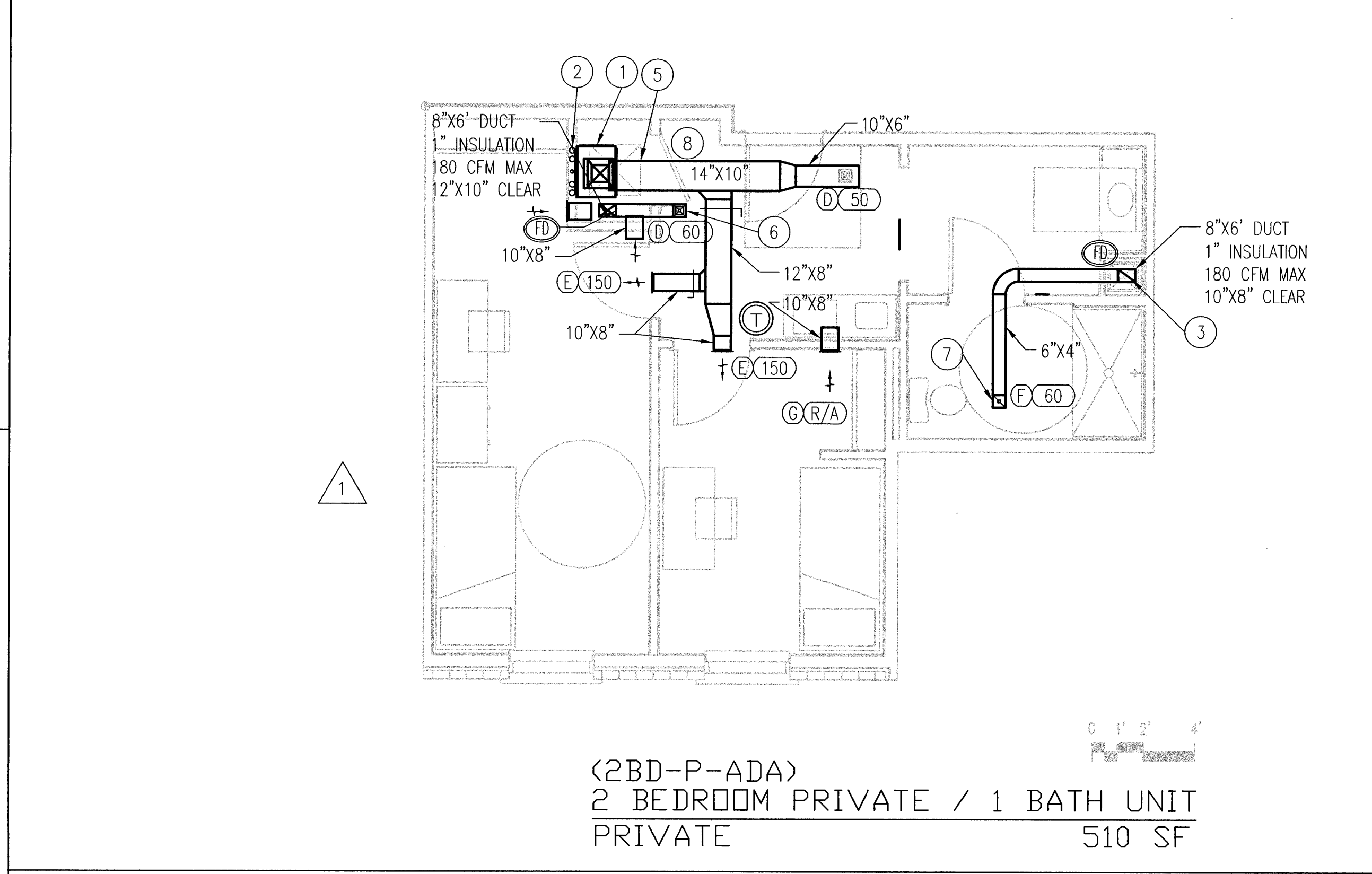
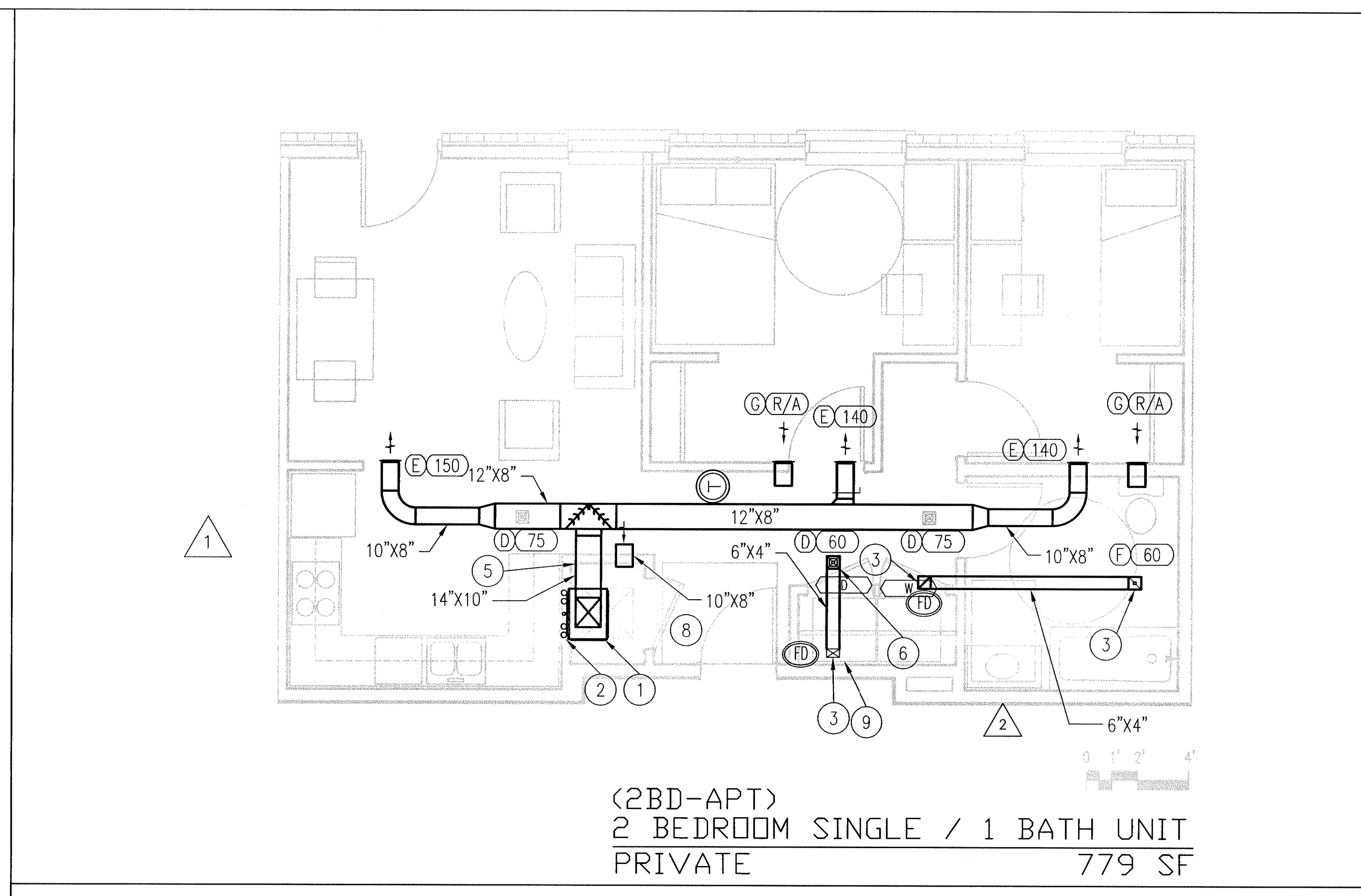
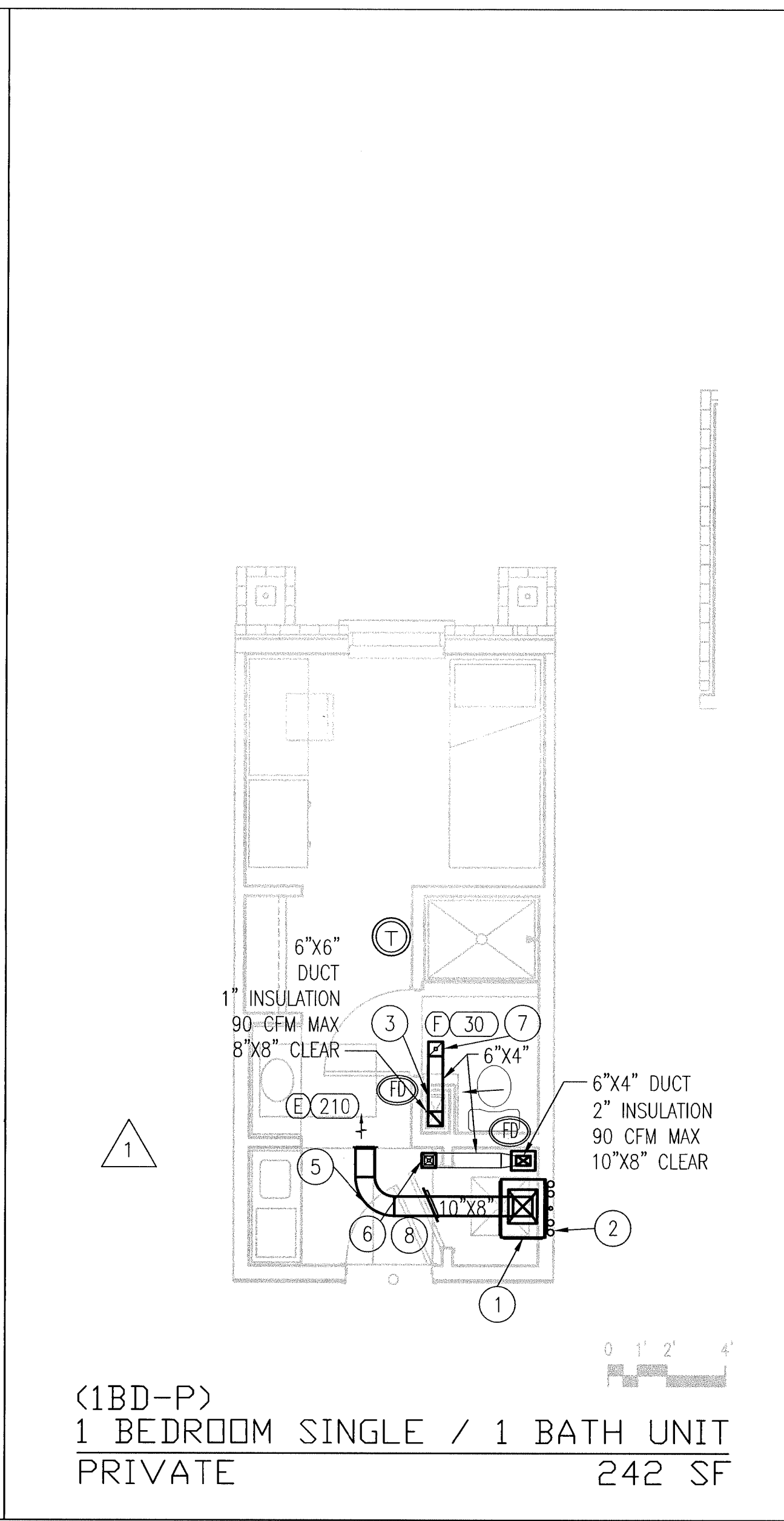
- 1 VERTICAL STACK FAN COIL UNIT.
- 2 HYDRONIC RISERS.
- 3 EXHAUST AIR RISER.
- 4 NOT USED.
- 5 SUPPLY AIR DUCT.
- 6 OUTDOOR AIR REGISTER.
- 7 TOILET EXHAUST.
- 8 RETURN THROUGH LOUVERED DOOR.
- 9 ROUTE 4" DRYER VENT TO EXTERIOR WALL. TERMINATE AT WALL WITH VENT CAP.

KEY MAP



MECHANICAL LEGEND

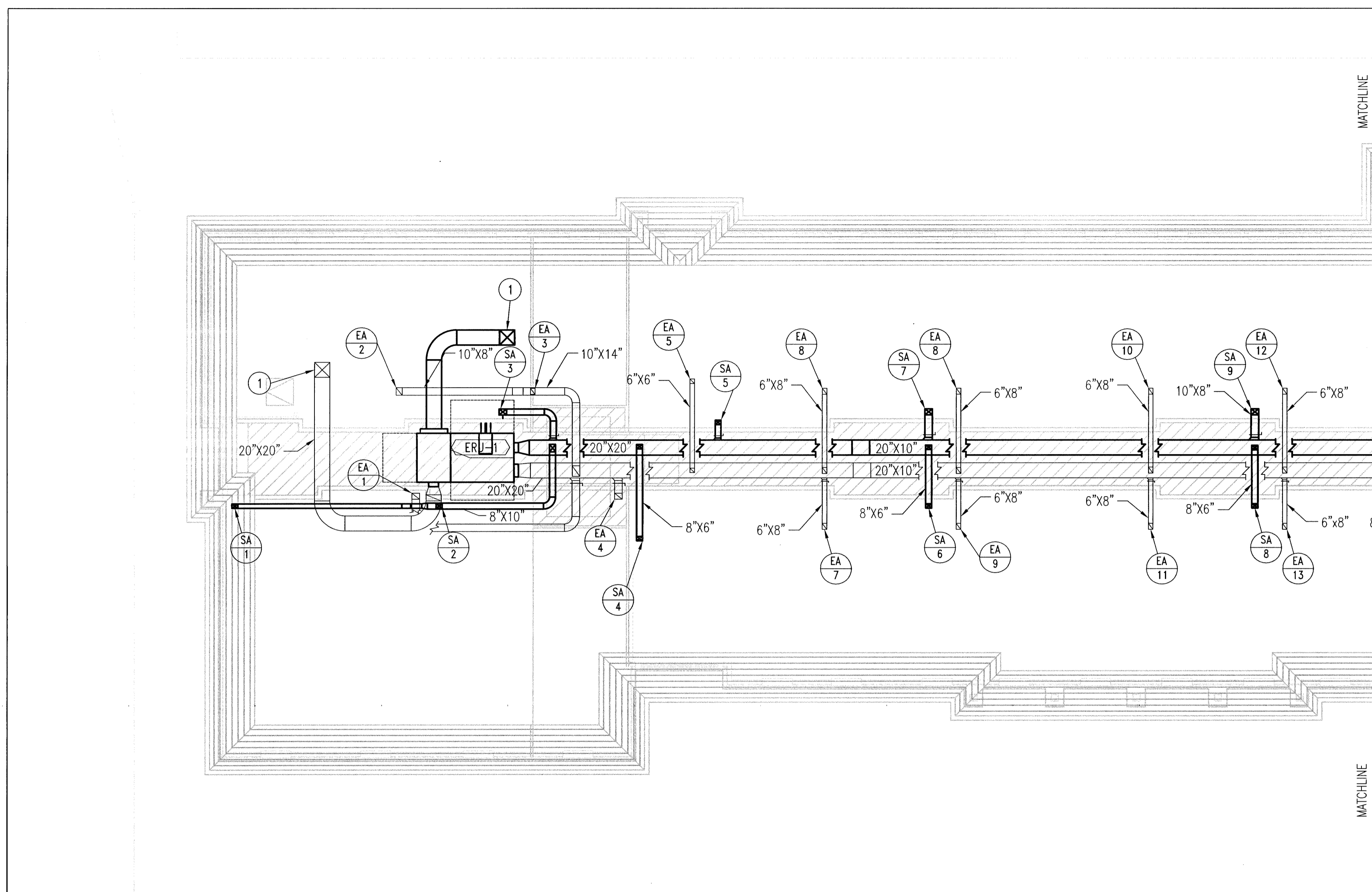
- ⊕ TEMPERATURE SENSOR SEE SPECIFICATIONS.
 - ⊞ SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION.
 - ⊞ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
 - ⊞ TURNING VANES.
 - ⊞ DUCT TRANSITION.
 - ⊞ RETURN DUCT W/SMOKE/FIRE DAMPER.
 - ⊞ VOLUME DAMPER.
 - ⊞ FIRE DAMPER.
 - ⊞ SMOKE/FIRE DAMPER.
- ⊞ X7 INDICATES DETAIL / LOCATION NUMBER
 ⊞ X1.1 INDICATES DRAWING TO REFERENCE



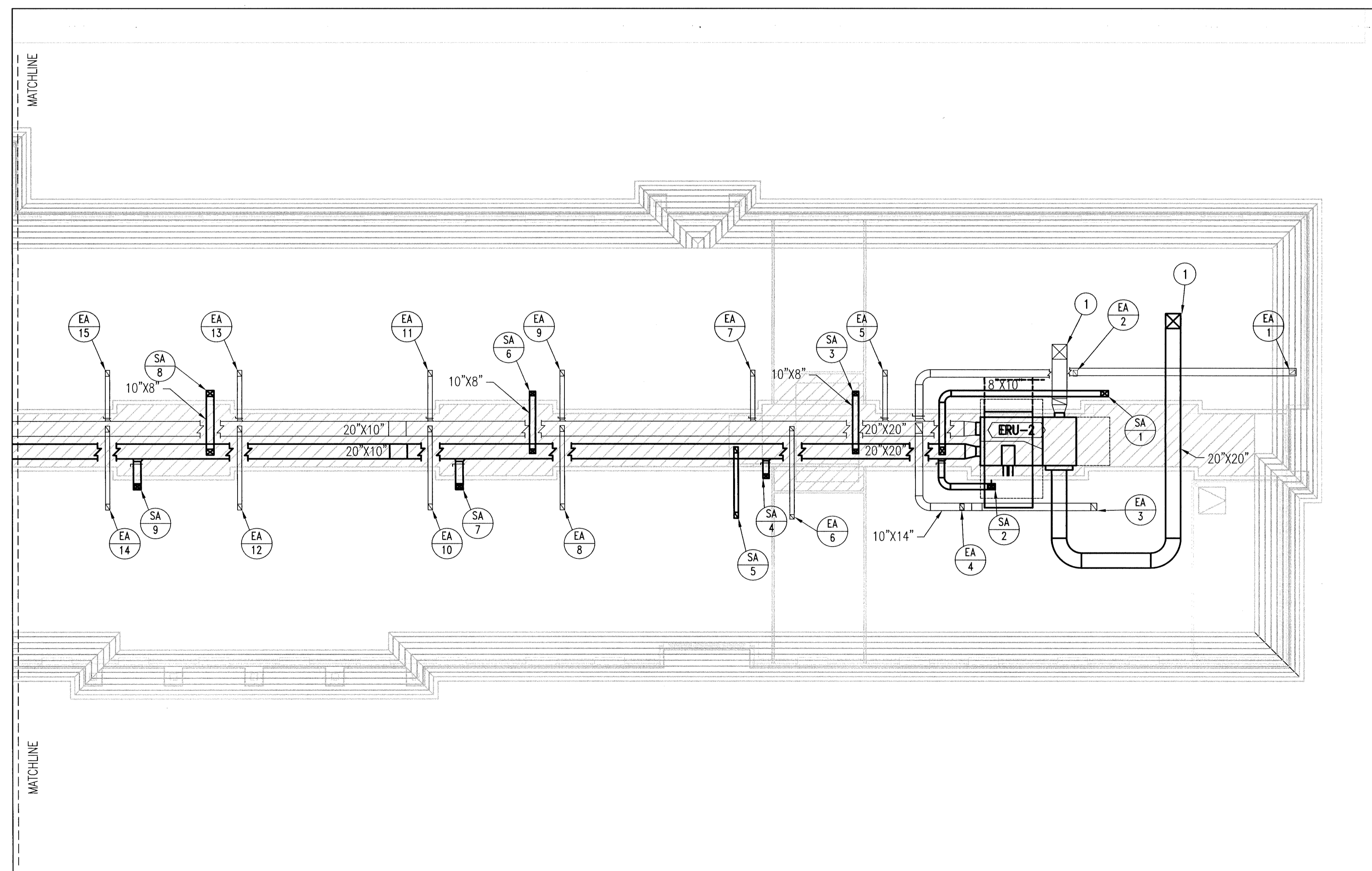
See Eagle Contracting
 AS Built Drawings

Typical Mechanical Plans - Typical Room Types

Scale: 1/4" = 1'-0"



1 Mechanical Plan - West Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

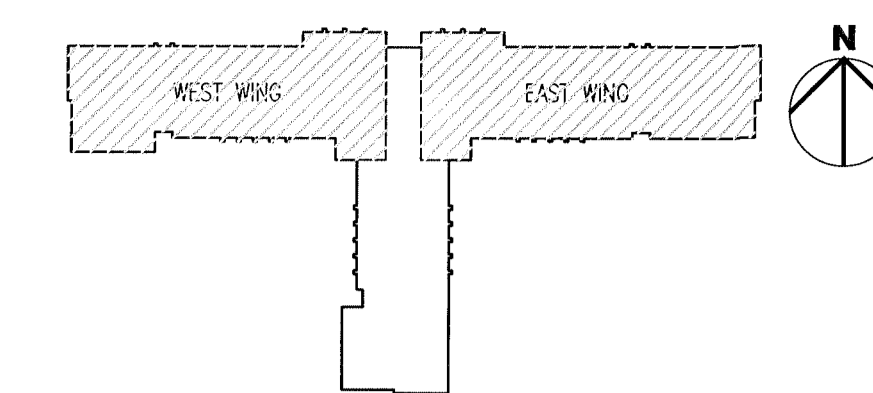


2 Mechanical Plan - East Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

KEY NOTES

- 1 DUCT UP THROUGH ROOF.
- 2 XXX
XXX

KEY MAP



MECHANICAL LEGEND

- TEMPERATURE SENSOR SEE SPECIFICATIONS.
 - SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
 - RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
 - TURNING VANES
 - DUCT TRANSITION
 - RETURN DUCT W/SMOKE/FIRE DAMPER
 - VOLUME DAMPER
 - FIRE DAMPER
 - SMOKE/FIRE DAMPER
- INDICATES DETAIL/ LOCATION NUMBER
 INDICATES DRAWING TO REFERENCE

Mechanical Attic Plan - West and East Wings
 Scale: As Indicated

*See Eagle Contracting
 AS Built Drawings*

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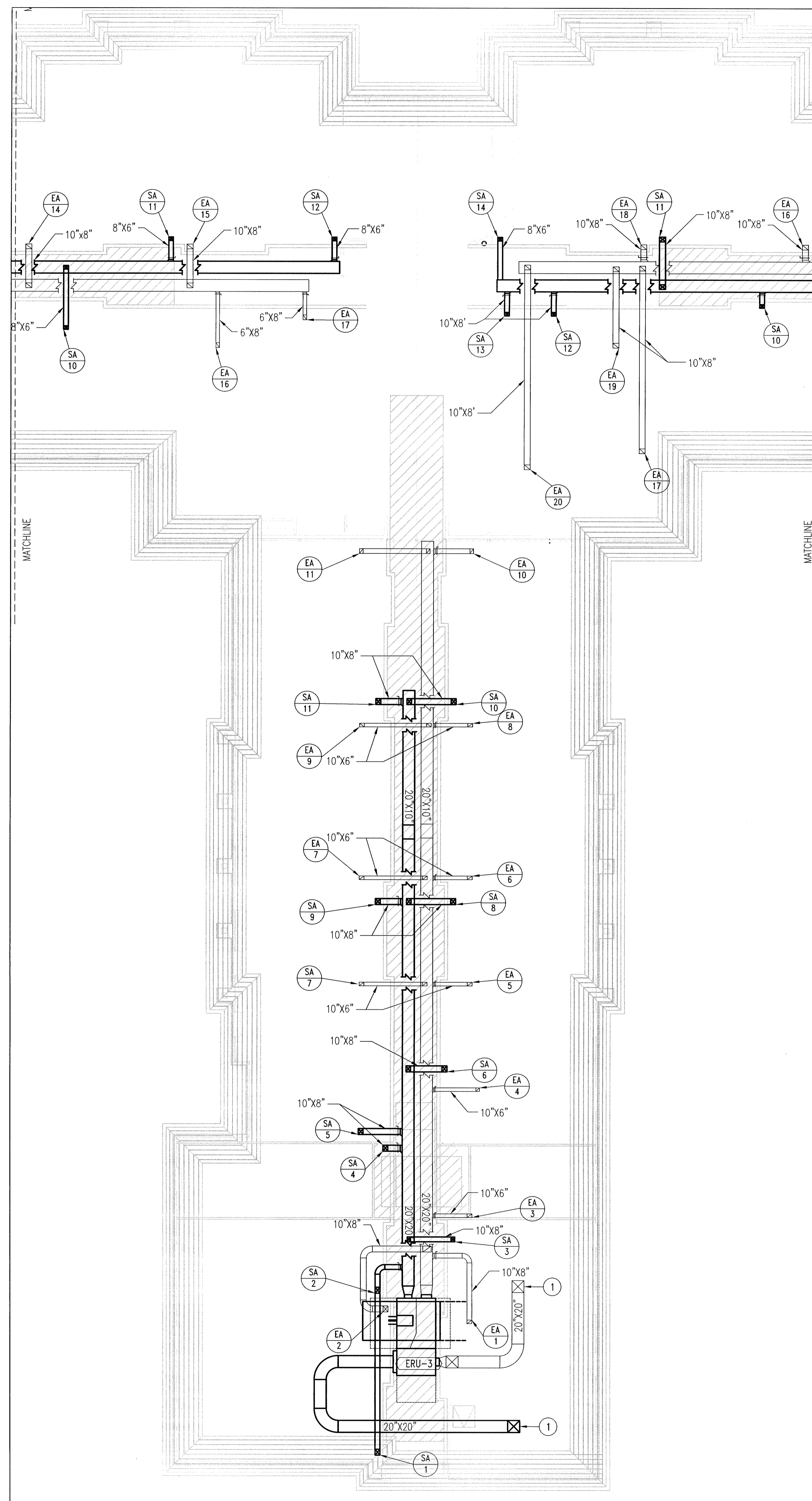
**MARSHALL
 ENGINEERING
 CORPORATION**
 10830 MEDICAL BOW
 HOUSTON, TX 77036
 PHONE: (281) 852-4131
 FAX: (281) 852-4631
 TOLL FREE: 1-800-399-3688
 E-MAIL: mesc@meec.com

Record Drawings

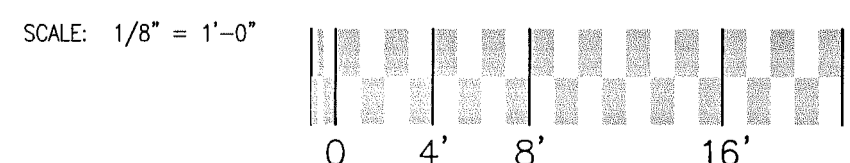
New Student Housing Project
 Blinn College
 Brenham, Texas

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M5.1



3 Mechanical Plan - South Wing and Lobby



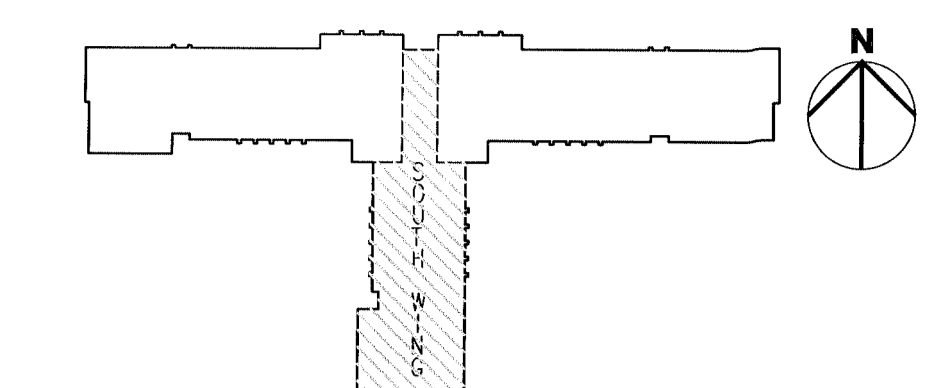
Mechanical Attic Plan - South Wing and Lobby

Scale: As Indicated

KEY NOTES

- ① DUCT UP THROUGH ROOF.
- ② XXX
XXX

KEY MAP

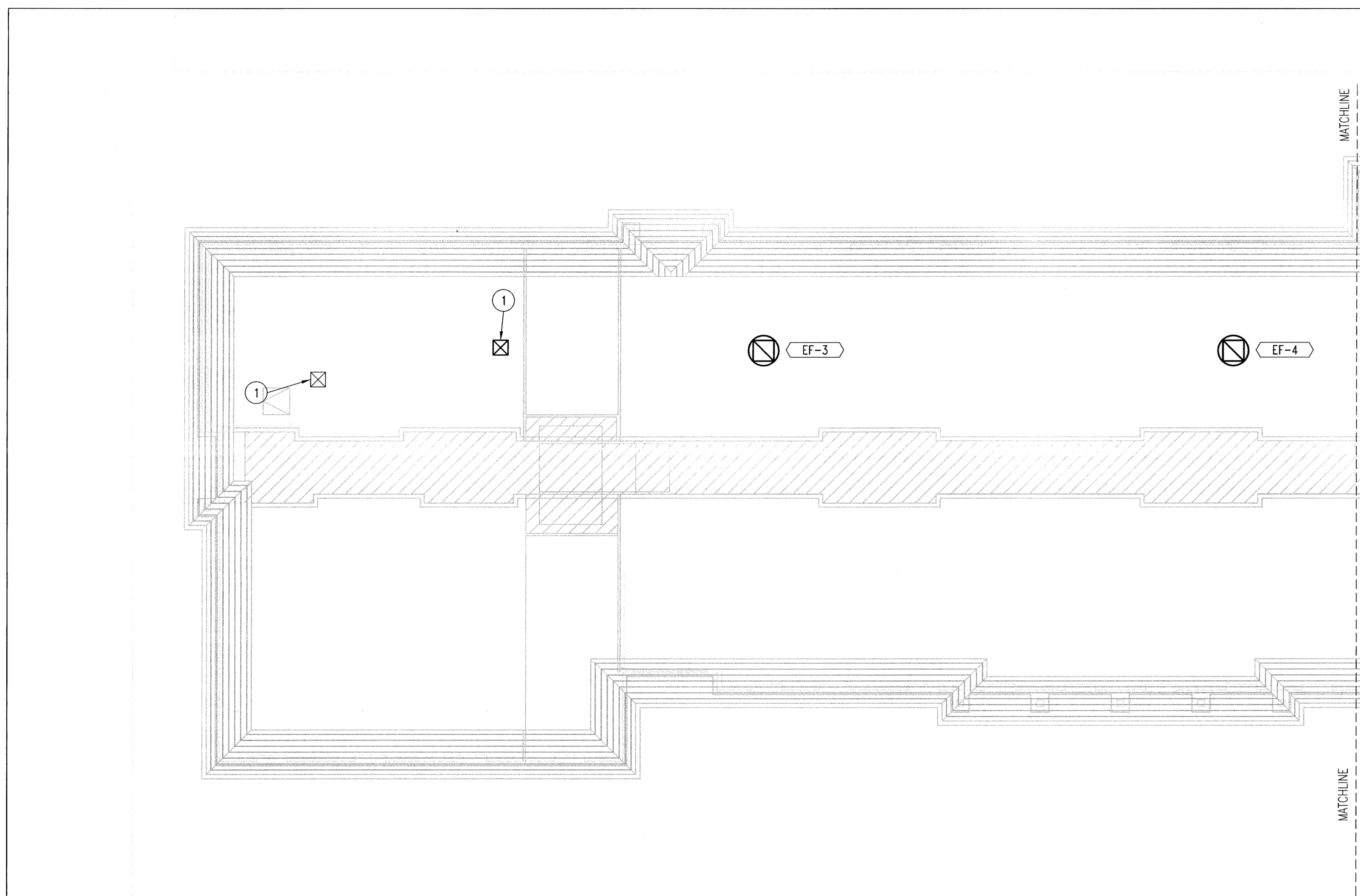


MECHANICAL LEGEND

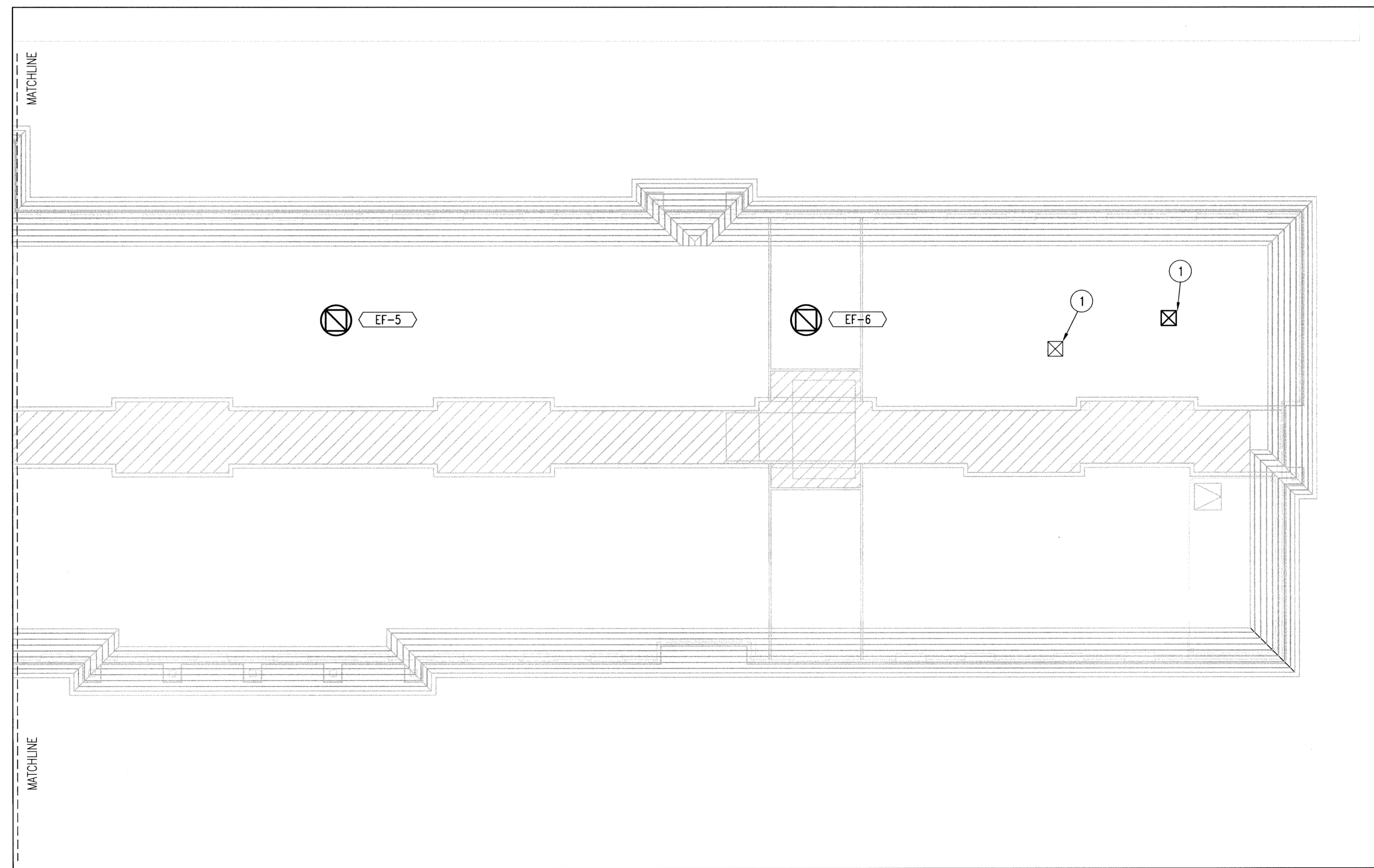
- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- VOLUME DAMPER
- TURNING VANES
- DUCT TRANSITION
- RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊙ FD FIRE DAMPER
- ⊙ SF SMOKE/FIRE DAMPER
- ⊙ X7 INDICATES DETAIL/ LOCATION NUMBER
- ⊙ X1.1 INDICATES DRAWING TO REFERENCE

See Eagle Contracting AS BUILT Drawings

PROJECT RECORDS



1 Mechanical Plan - West Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

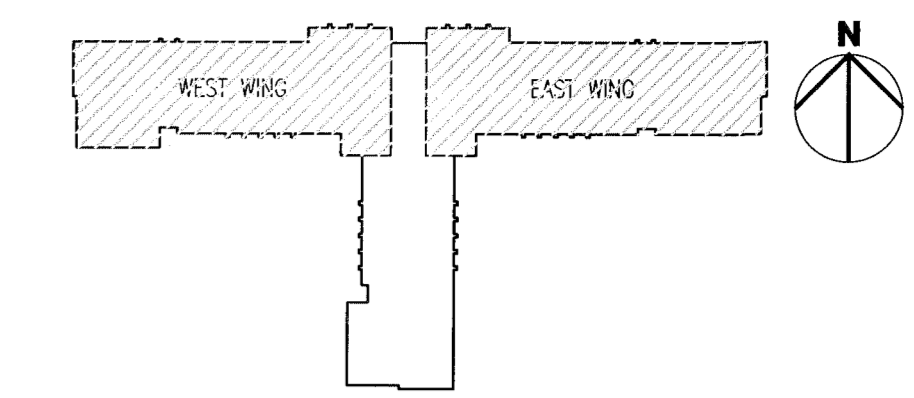


2 Mechanical Plan - East Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

KEY NOTES

- ① DUCT DOWN TO ERU.
- ②

KEY MAP



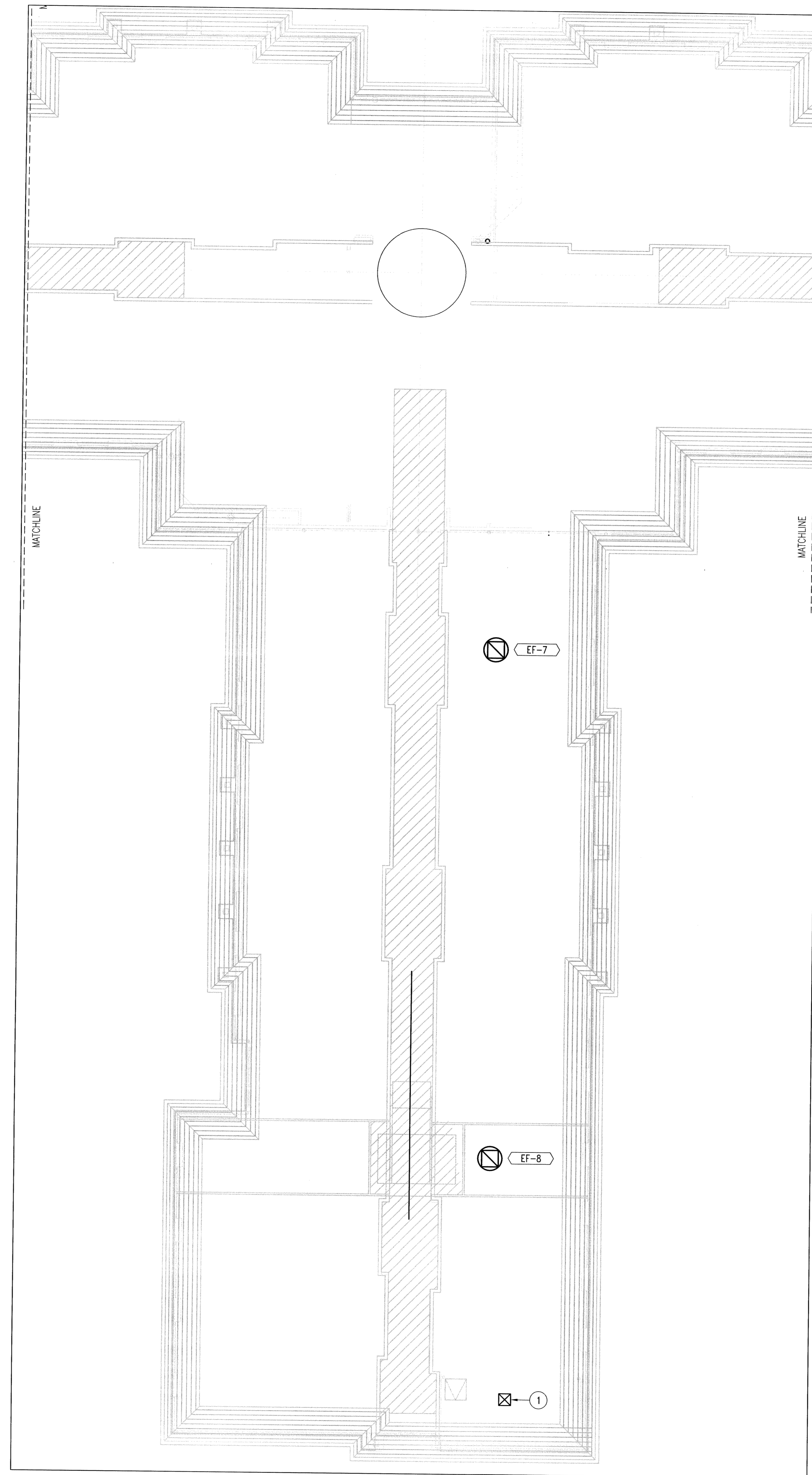
MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- ⊠ SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ⊠ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ⊠ TURNING VANES
- ⊠ DUCT TRANSITION
- ⊠ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊠ VOLUME DAMPER
- ⊠ FIRE DAMPER
- ⊠ SMOKE/FIRE DAMPER
- ⊠ X7 - INDICATES DETAIL/ LOCATION NUMBER
- ⊠ X1.1 - INDICATES DRAWING TO REFERENCE

Mechanical Roof Plan - West and East Wings
 Scale: As Indicated

See Eagle Contracting
 AS BUILT DRAWINGS

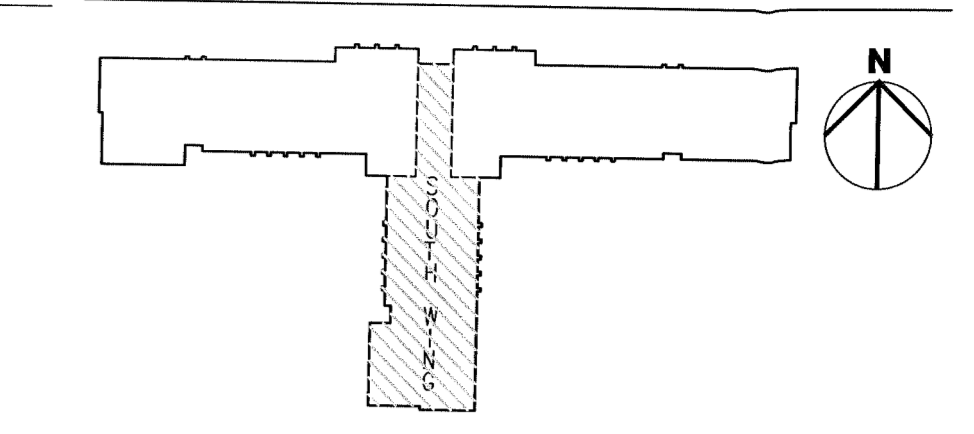
PROJECT RECORDS



KEY NOTES

- ① DUCT DOWN TO ERU.
- ②

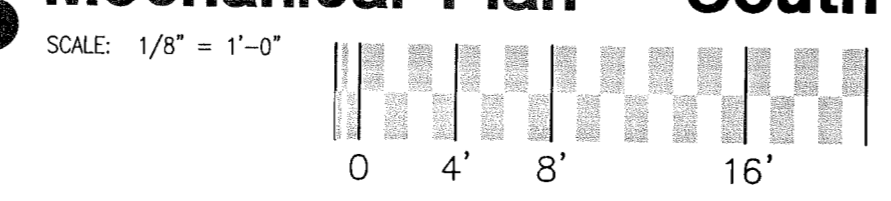
KEY MAP



MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- ☐ | SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- ☐ | RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ⊘ TURNING VANES
- ⊘ DUCT TRANSITION
- ⊘ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊘ VOLUME DAMPER
- ⊘ FIRE DAMPER
- ⊘ SMOKE/FIRE DAMPER
- ⊘ X7 INDICATES DETAIL/ LOCATION NUMBER
- ⊘ X1.1 INDICATES DRAWING TO REFERENCE

3 Mechanical Plan - South Wing and Lobby



Mechanical Roof Plan - South Wing and Lobby
Scale: As Indicated

See Eagle Contracting AS BUILT DRAWINGS

PROJECT RECORDS

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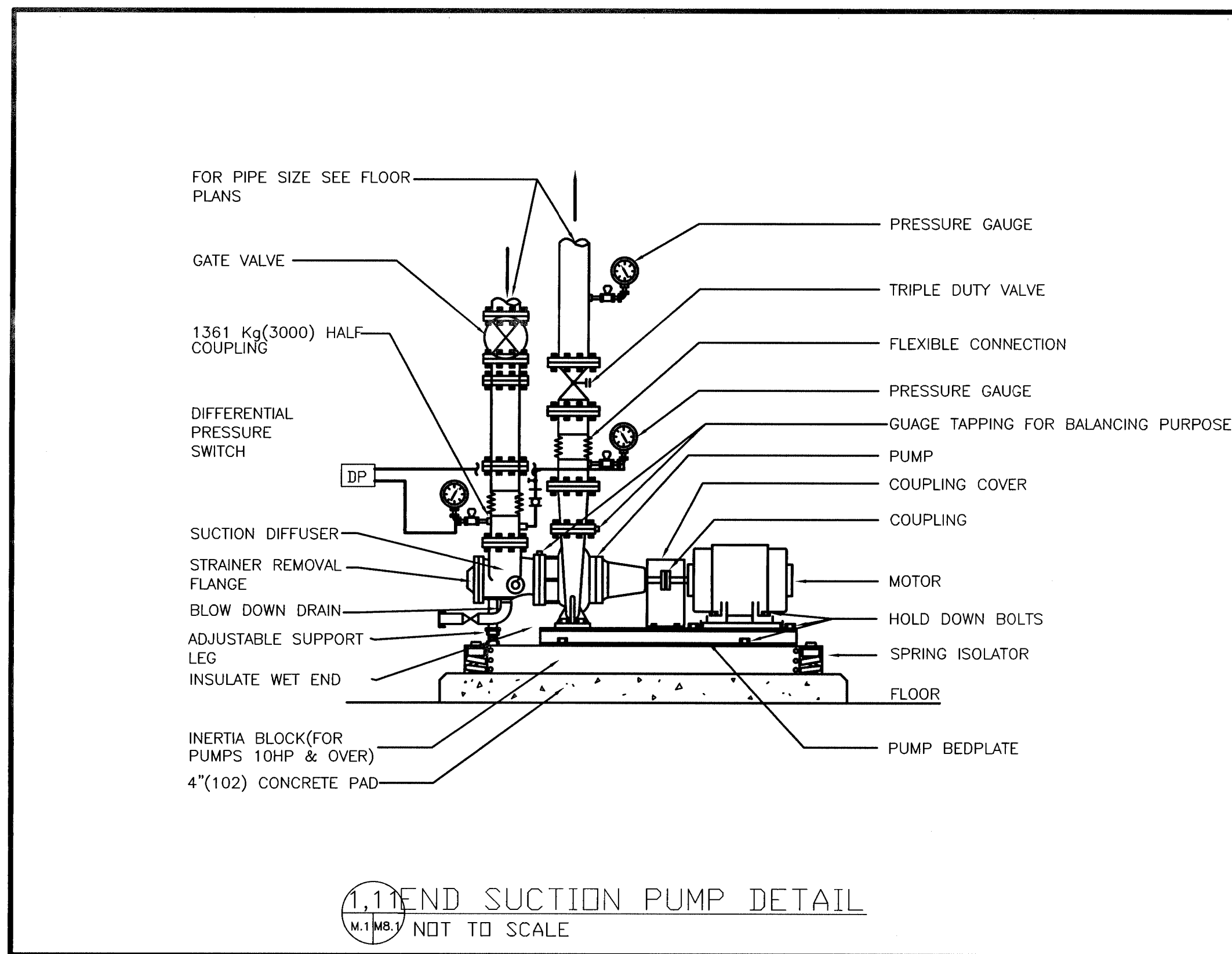
MARSHALL ENGINEERING CORPORATION
10830 MEDICAL BOW
HOUSTON, TX 77036
PHONE: (281) 252-4131
FAX: (281) 252-4331
TELE: 1-505-555-1000
E-MAIL: mrc@marshall.com

Record Drawings

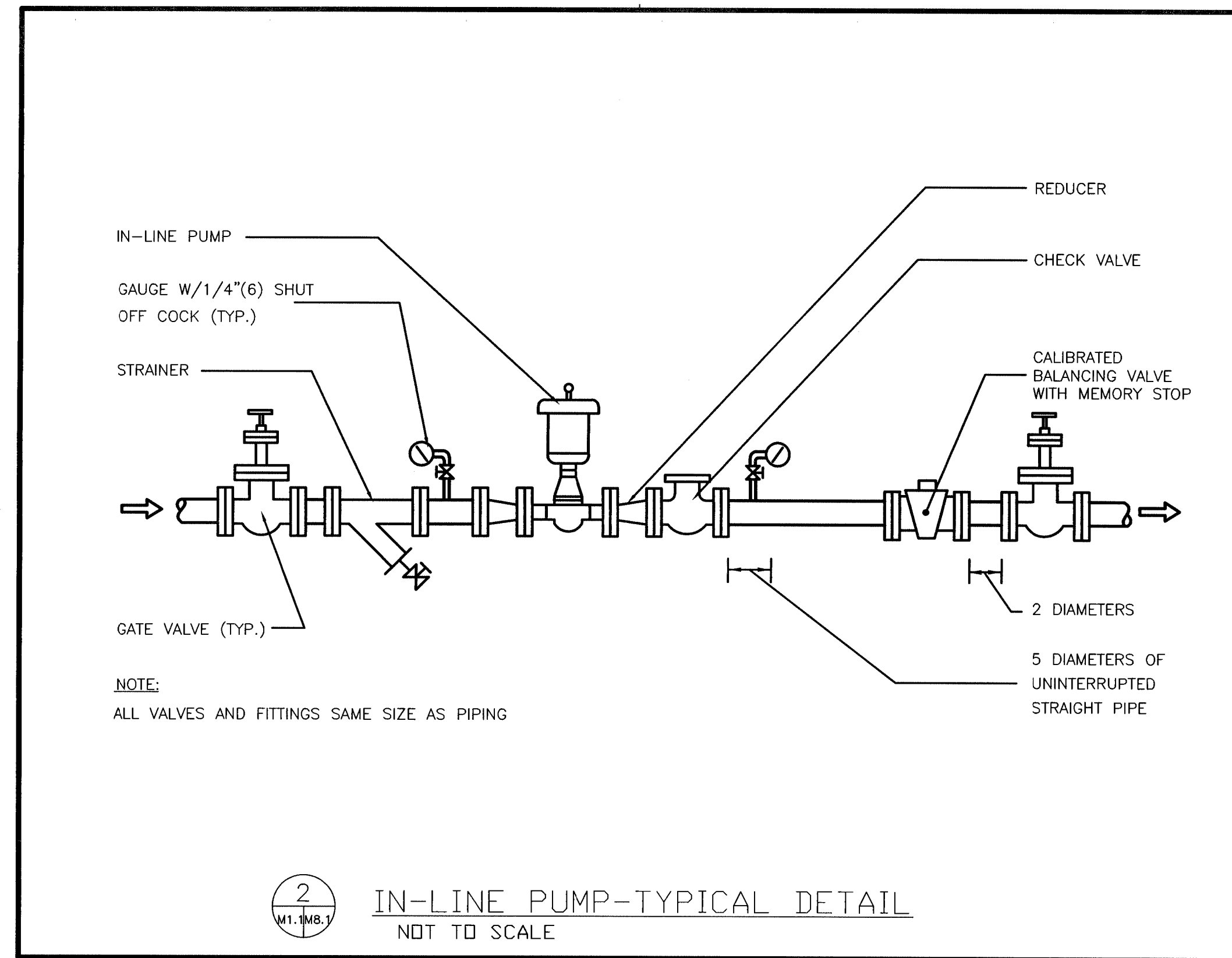
New Student Housing Project
Blinn College
Brenham, Texas

RECORD DRAWINGS
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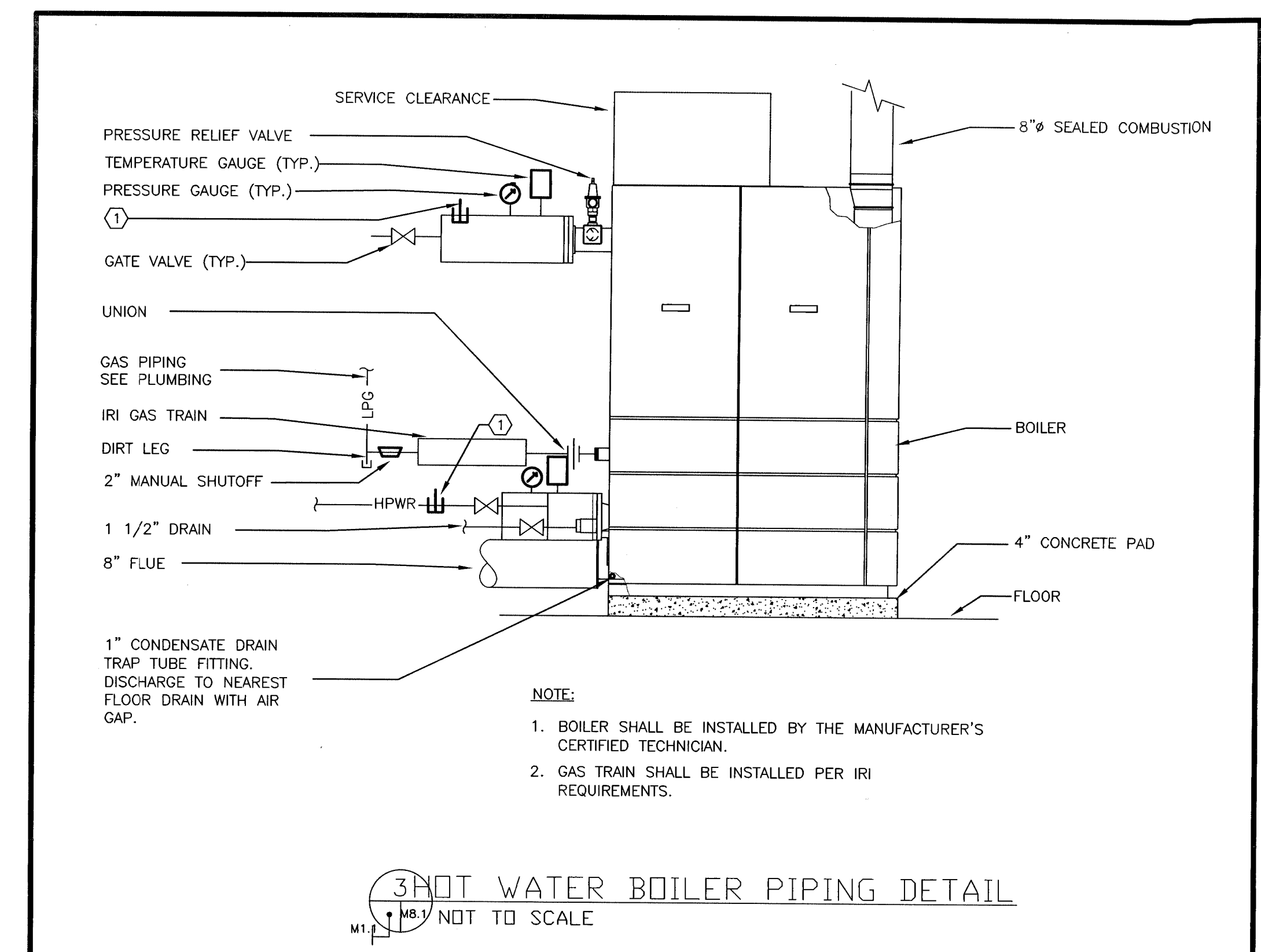
M6.2



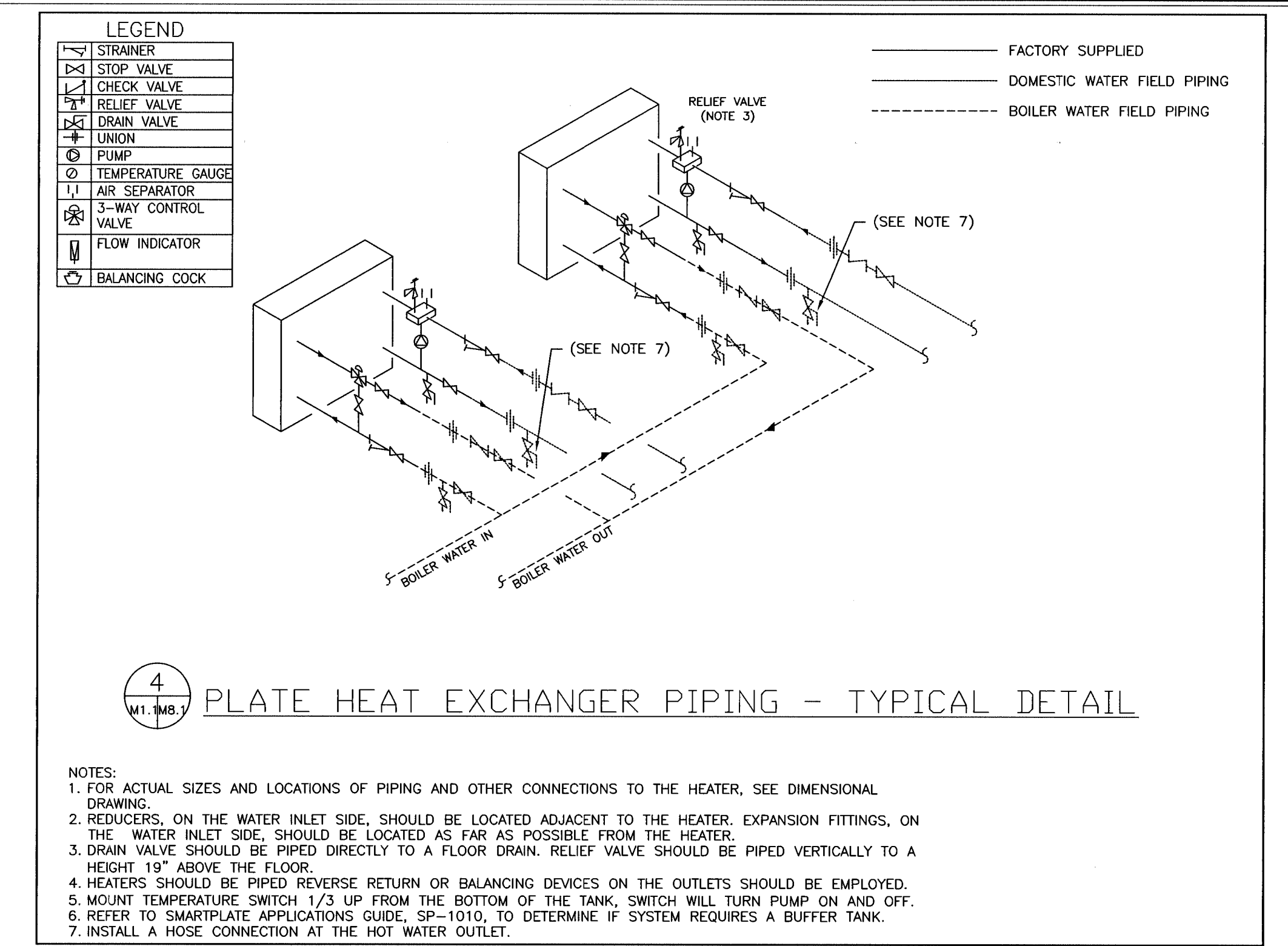
1.1 END SUCTION PUMP DETAIL
NOT TO SCALE



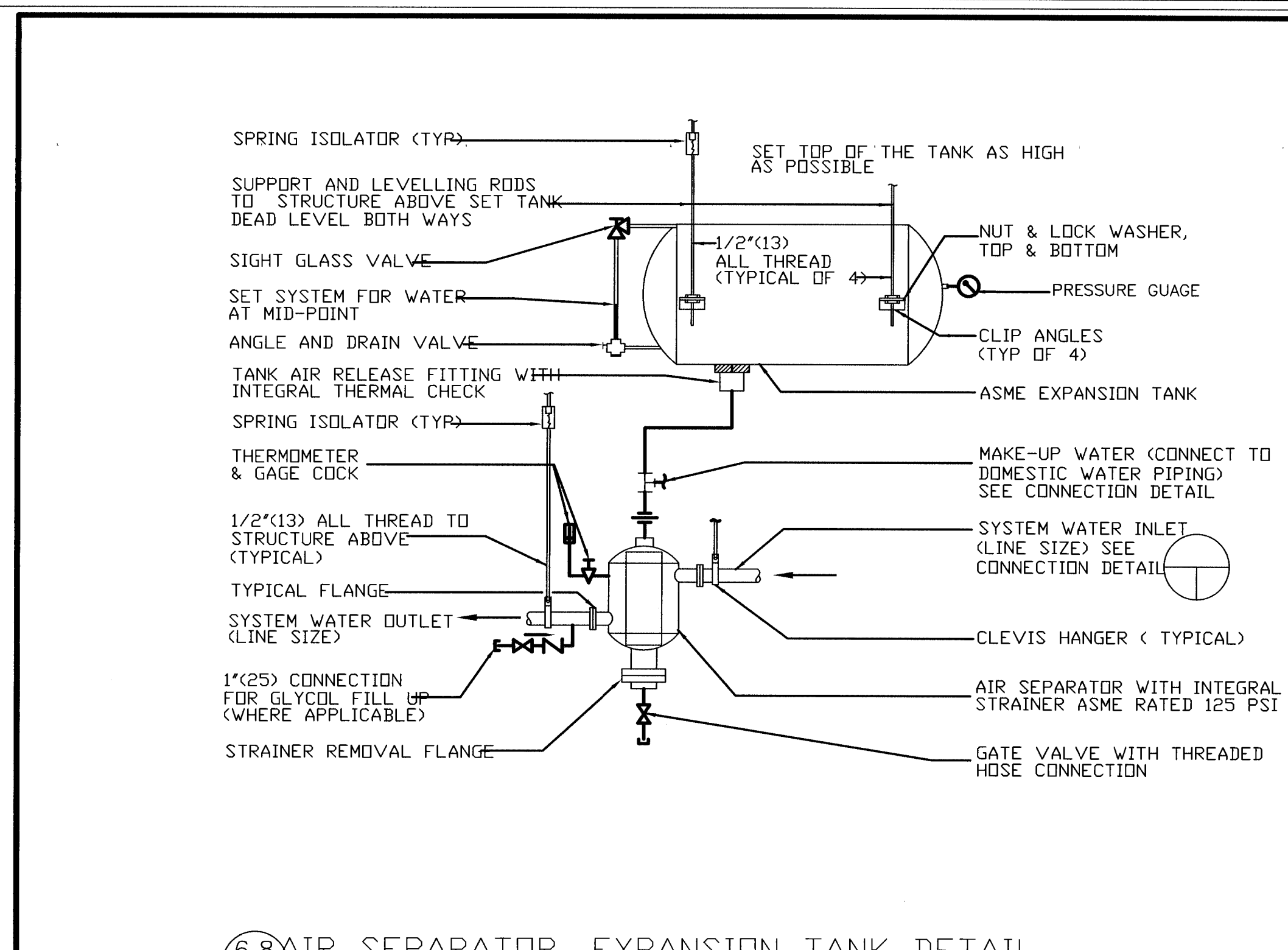
2 IN-LINE PUMP-TYPICAL DETAIL
NOT TO SCALE



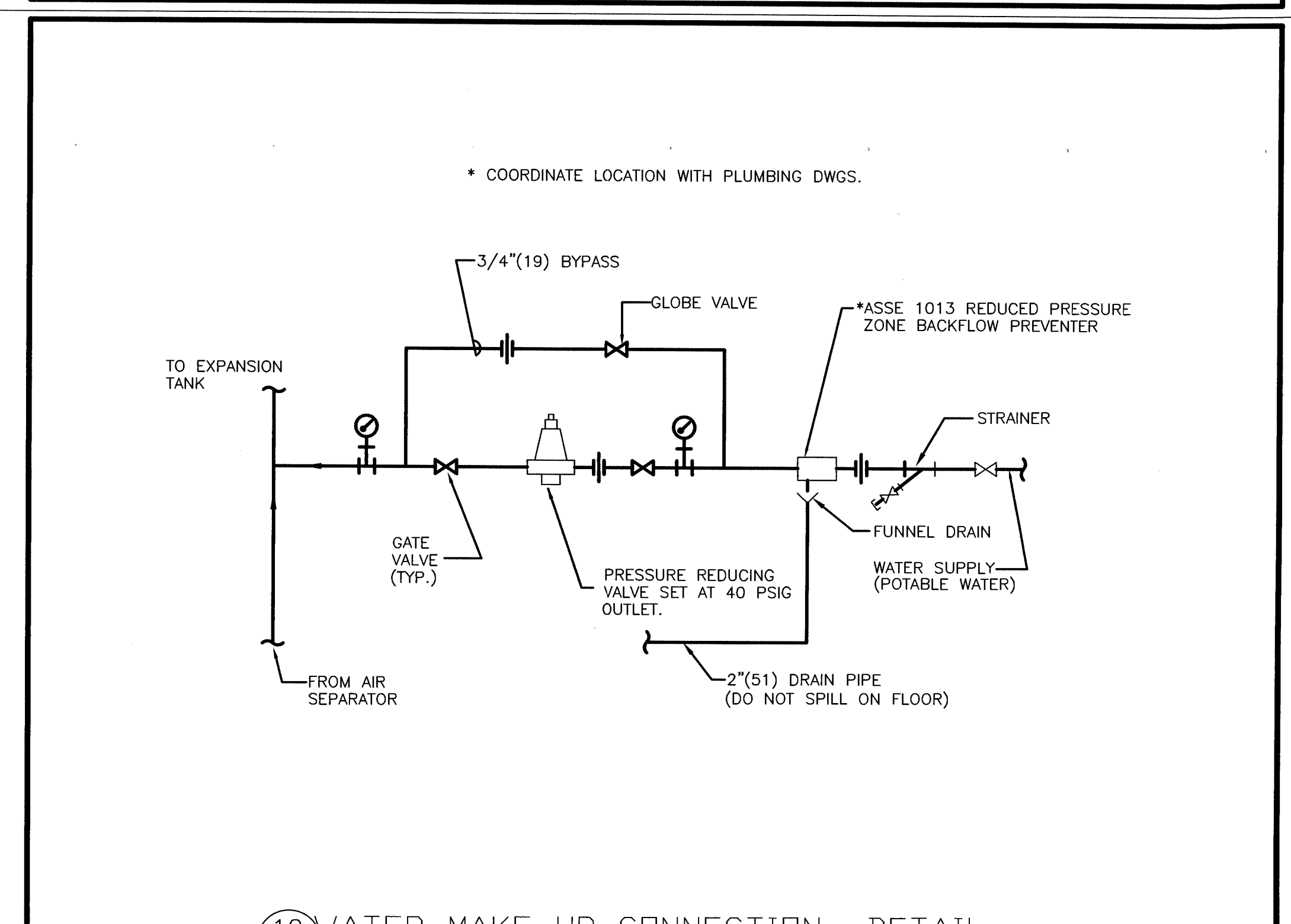
3 HOT WATER BOILER PIPING DETAIL
NOT TO SCALE



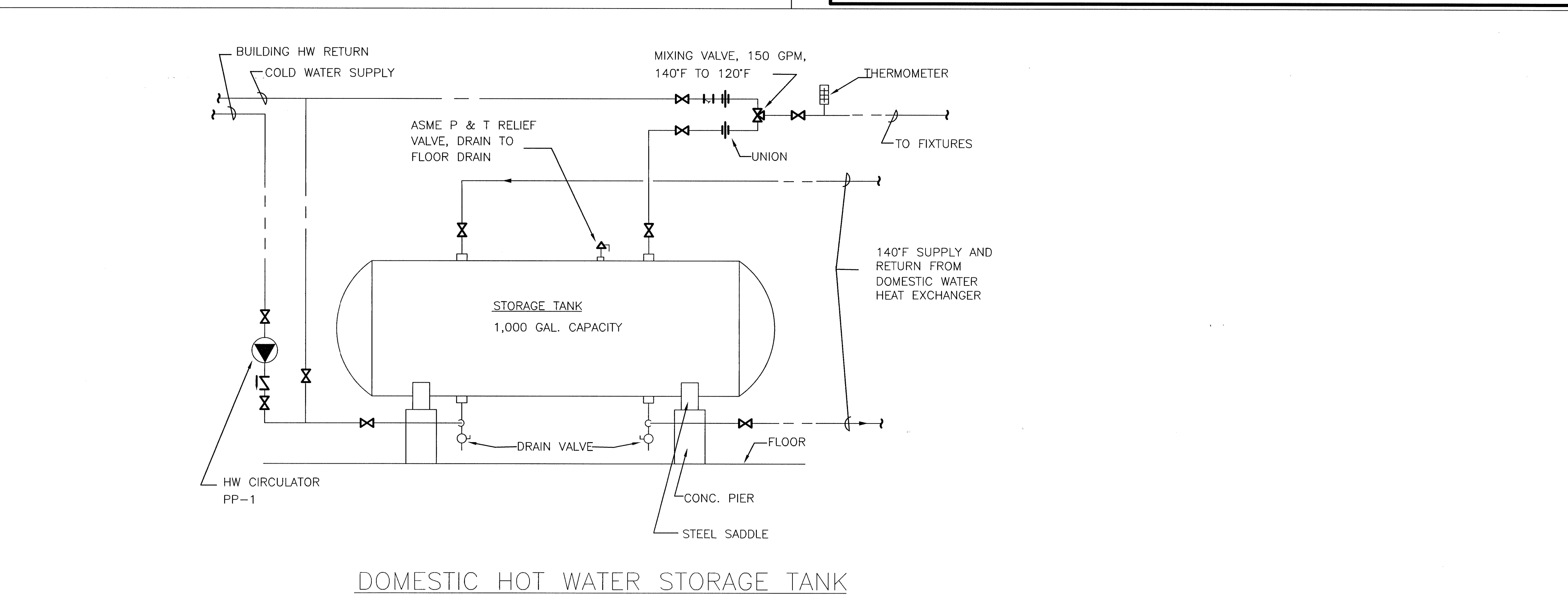
4 PLATE HEAT EXCHANGER PIPING - TYPICAL DETAIL
NOT TO SCALE



6 AIR SEPARATOR, EXPANSION TANK DETAIL
NOT TO SCALE



10 WATER MAKE-UP CONNECTION DETAIL
NOT TO SCALE



DOMESTIC HOT WATER STORAGE TANK

NOTES
1. FOR SYMBOLS, ABBREVIATION AND MECHANICAL GENERAL NOTES, SEE DWG. M-0.

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15830 MEMPHIS BOW
HOUSTON, TX 77040
PHONE: (281) 855-4131
FAX: (281) 855-4511
WWW: www.marshalleng.com

Record Drawings

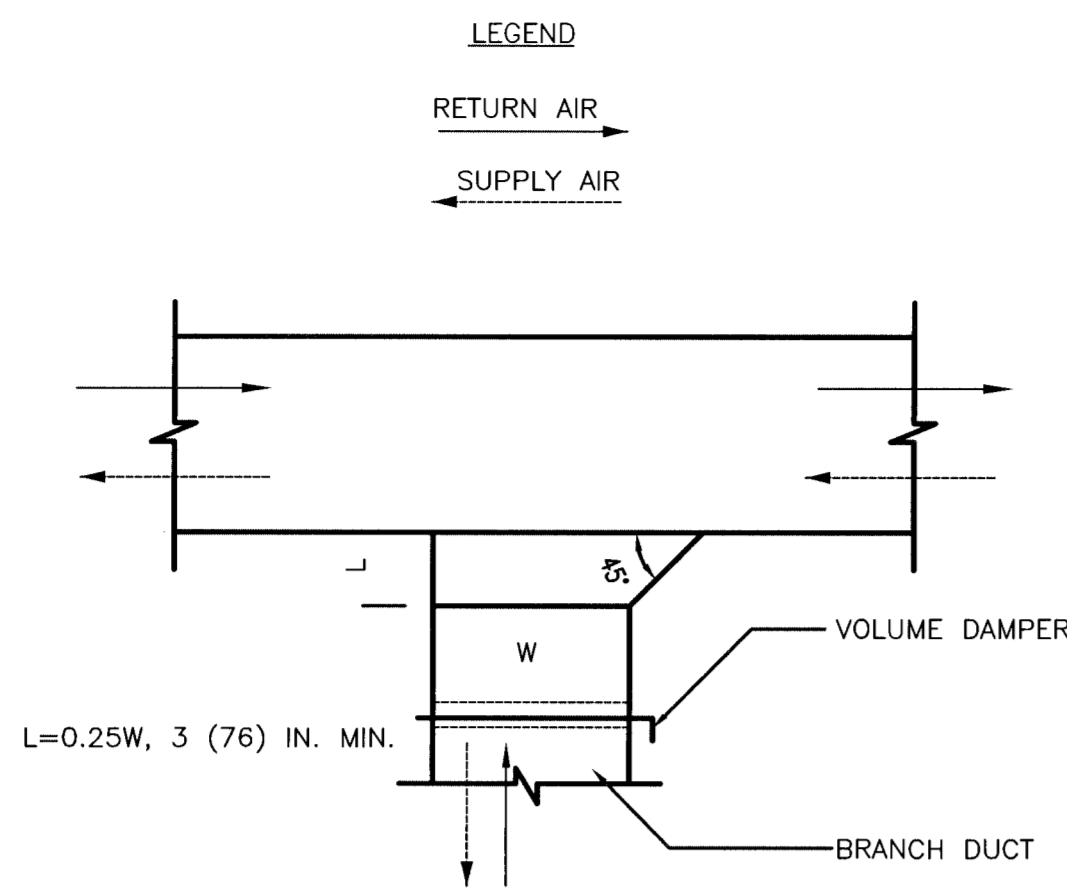
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Blinn College
Brenham, Texas

RECORD DRAWINGS
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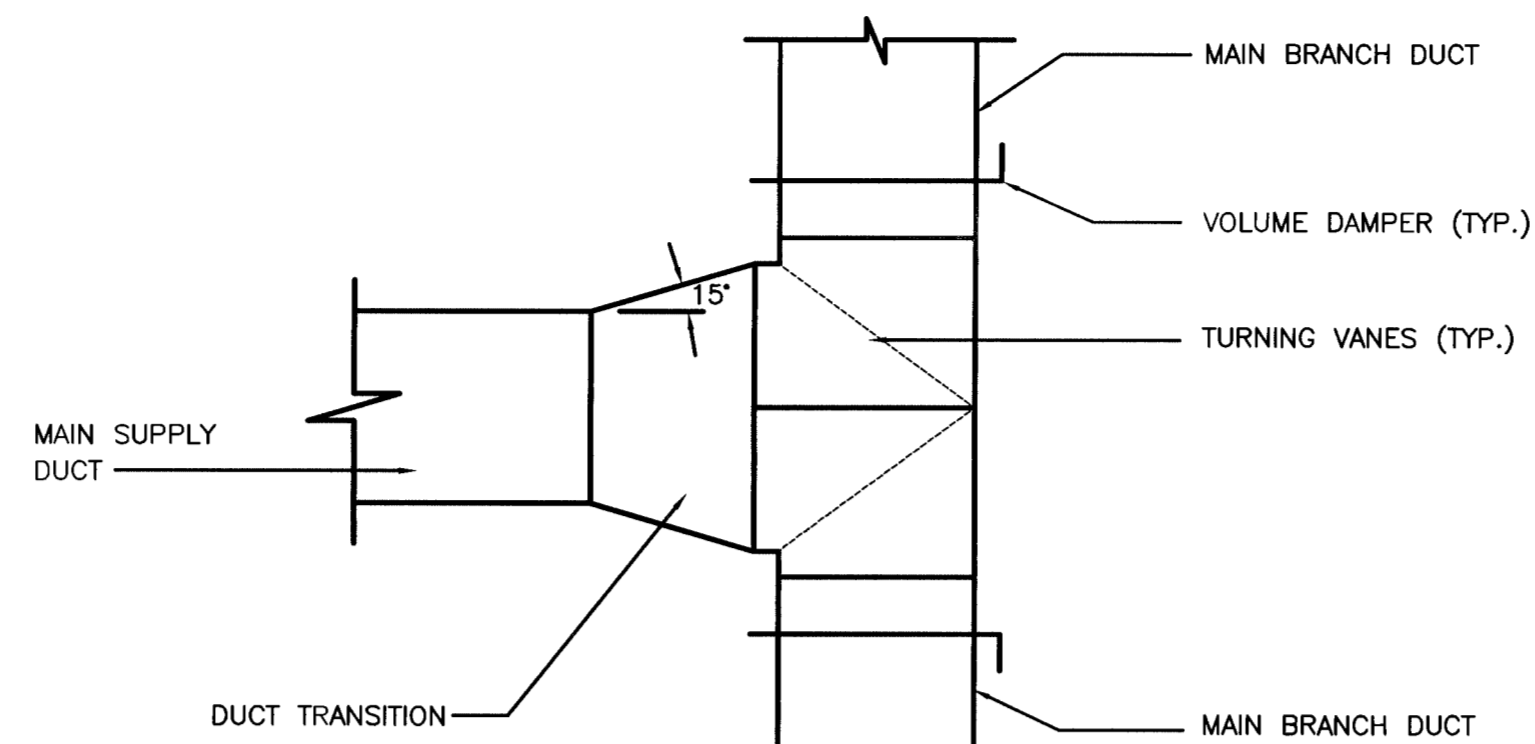
PROJECT RECORDS

Mechanical Details
Scale: N.T.S.

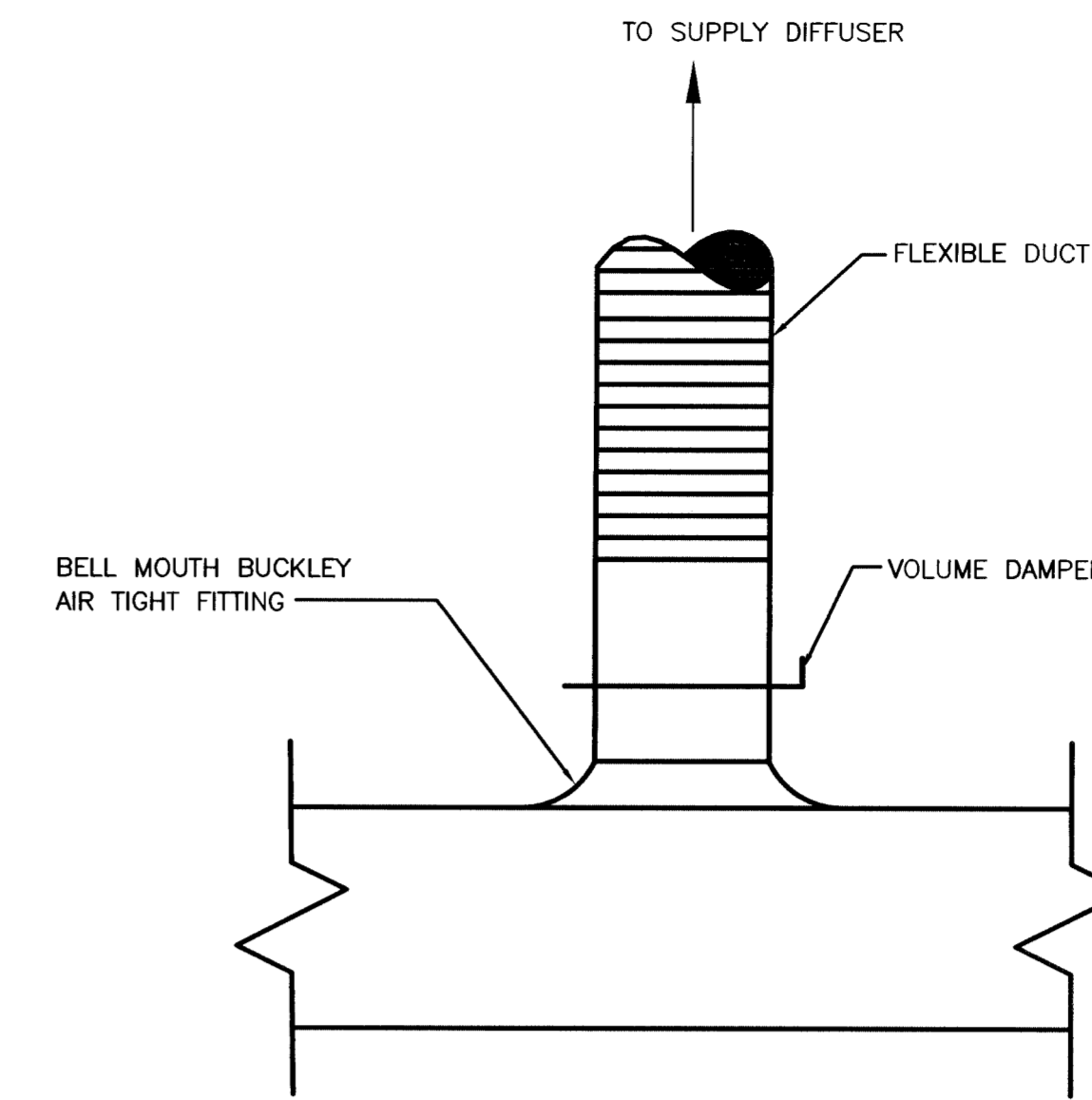
M8.1



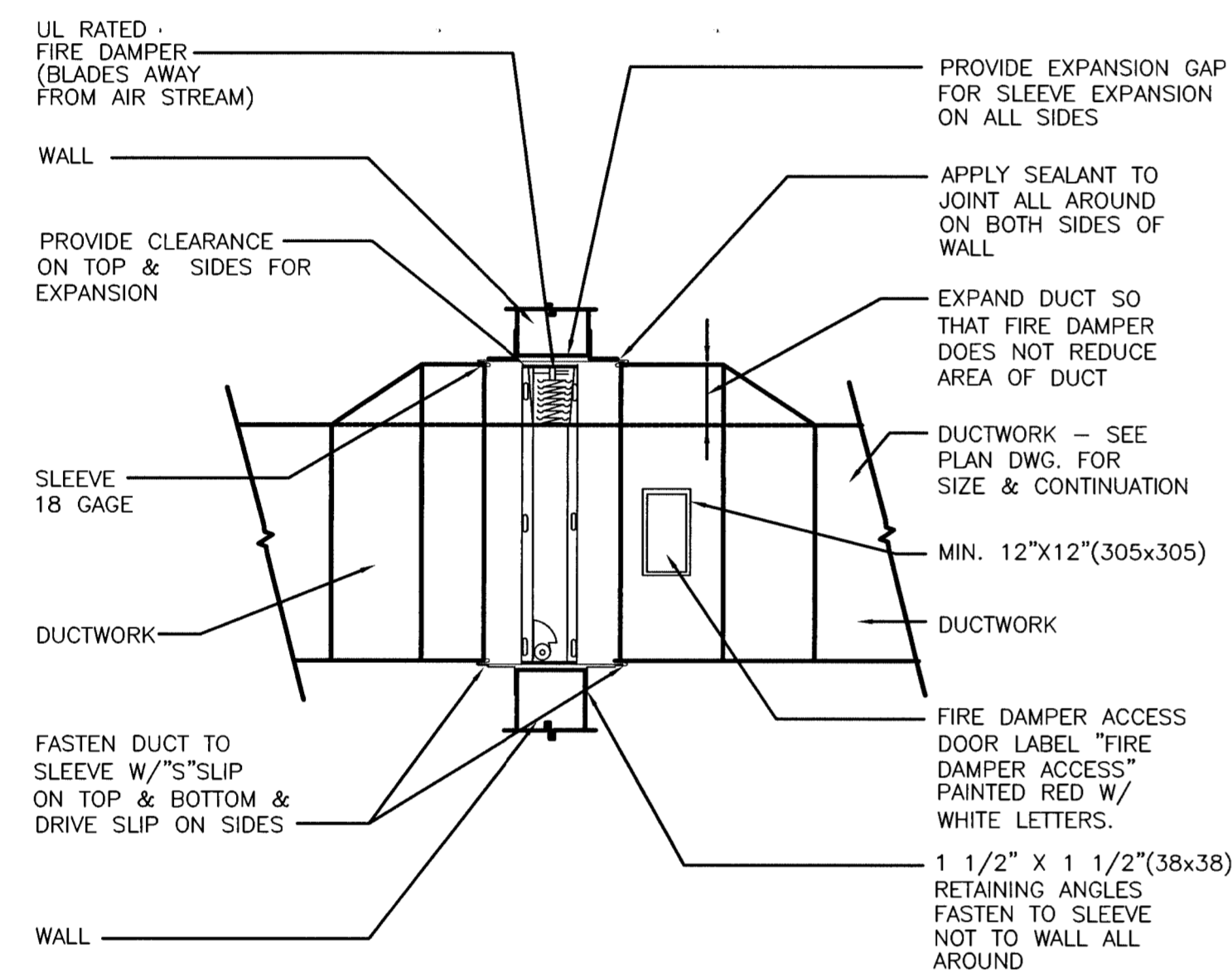
BRANCH DUCT CONNECTION - TYPICAL DETAIL
NOT TO SCALE



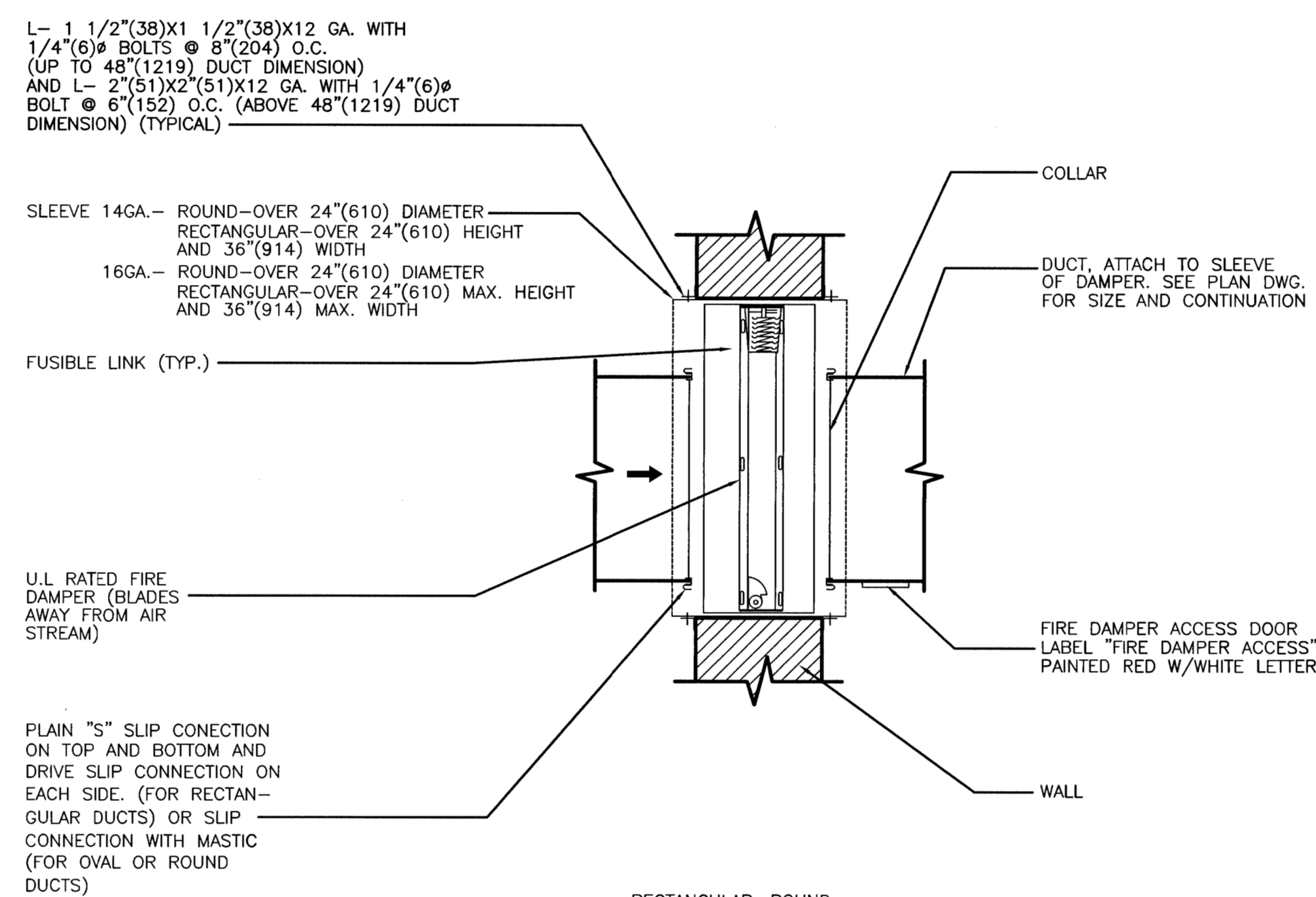
TEE BRANCH DUCT CONNECTION - TYPICAL DETAIL
NOT TO SCALE



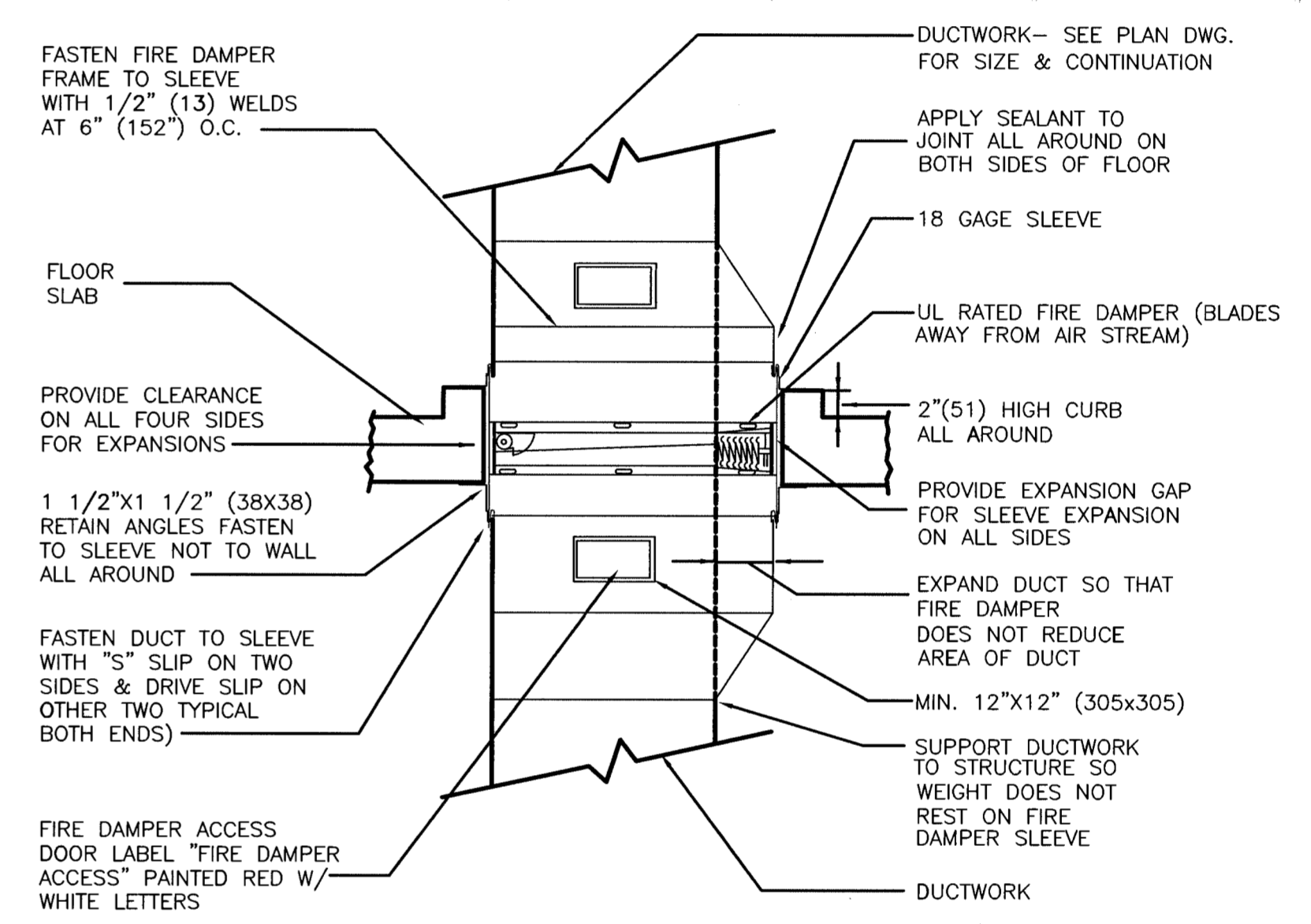
DIFFUSER FLEXIBLE DUCT CONNECTION - TYPICAL DETAIL
NOT TO SCALE



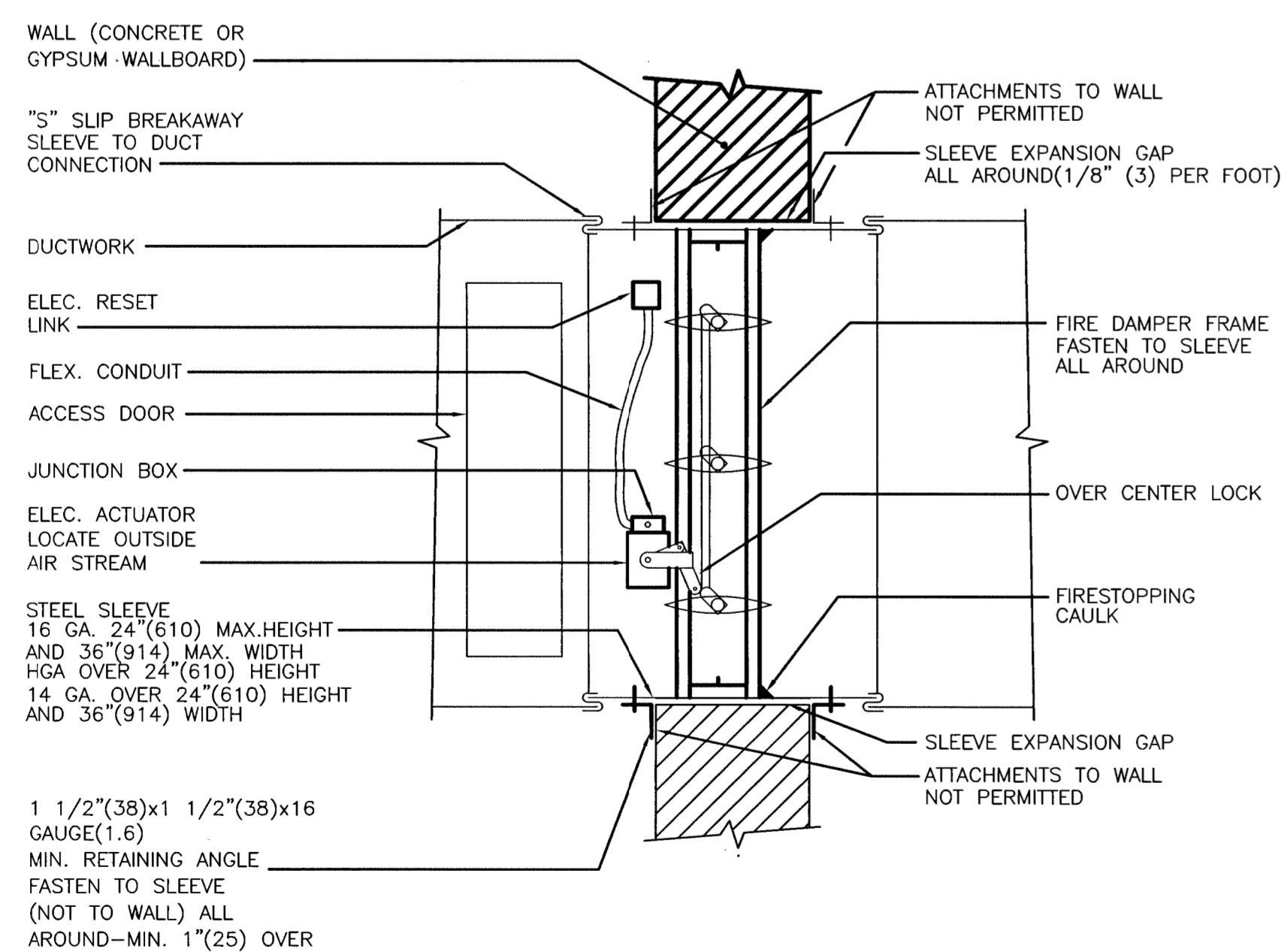
HORIZONTAL DUCT FIRE DAMPER
TYPICAL DETAIL
NOT TO SCALE



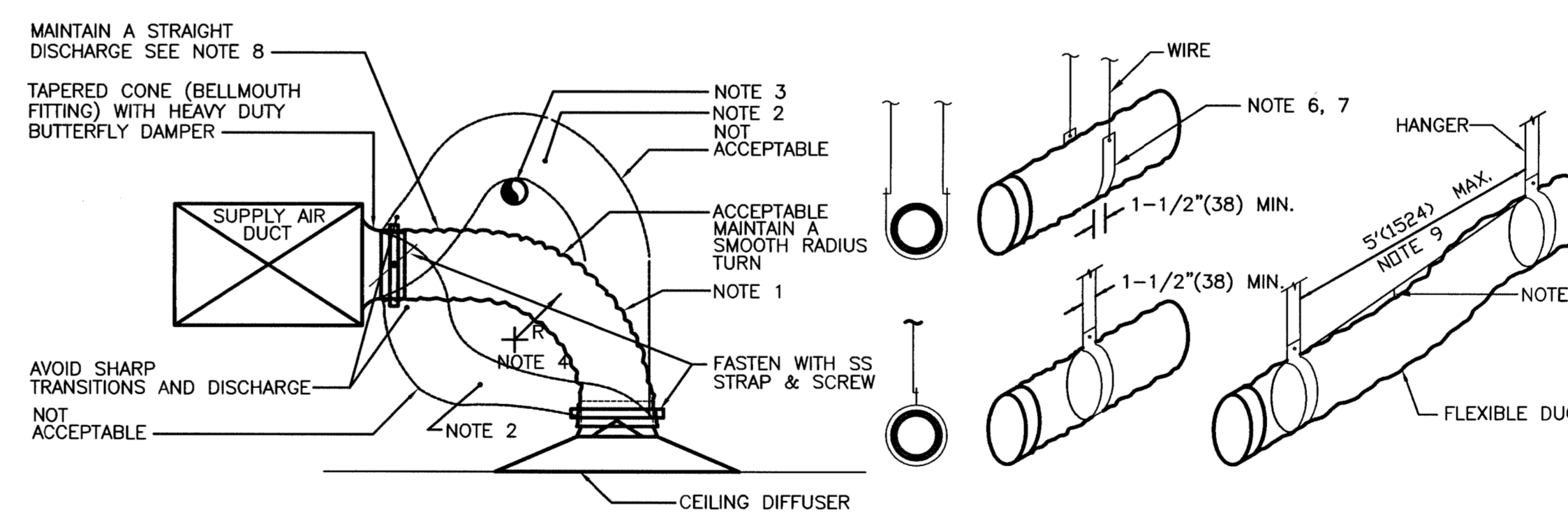
WALL FIRE DAMPER - TYPICAL DETAIL
NOT TO SCALE



VERTICAL DUCT FIRE DAMPER-TYPICAL DETAIL
NOT TO SCALE

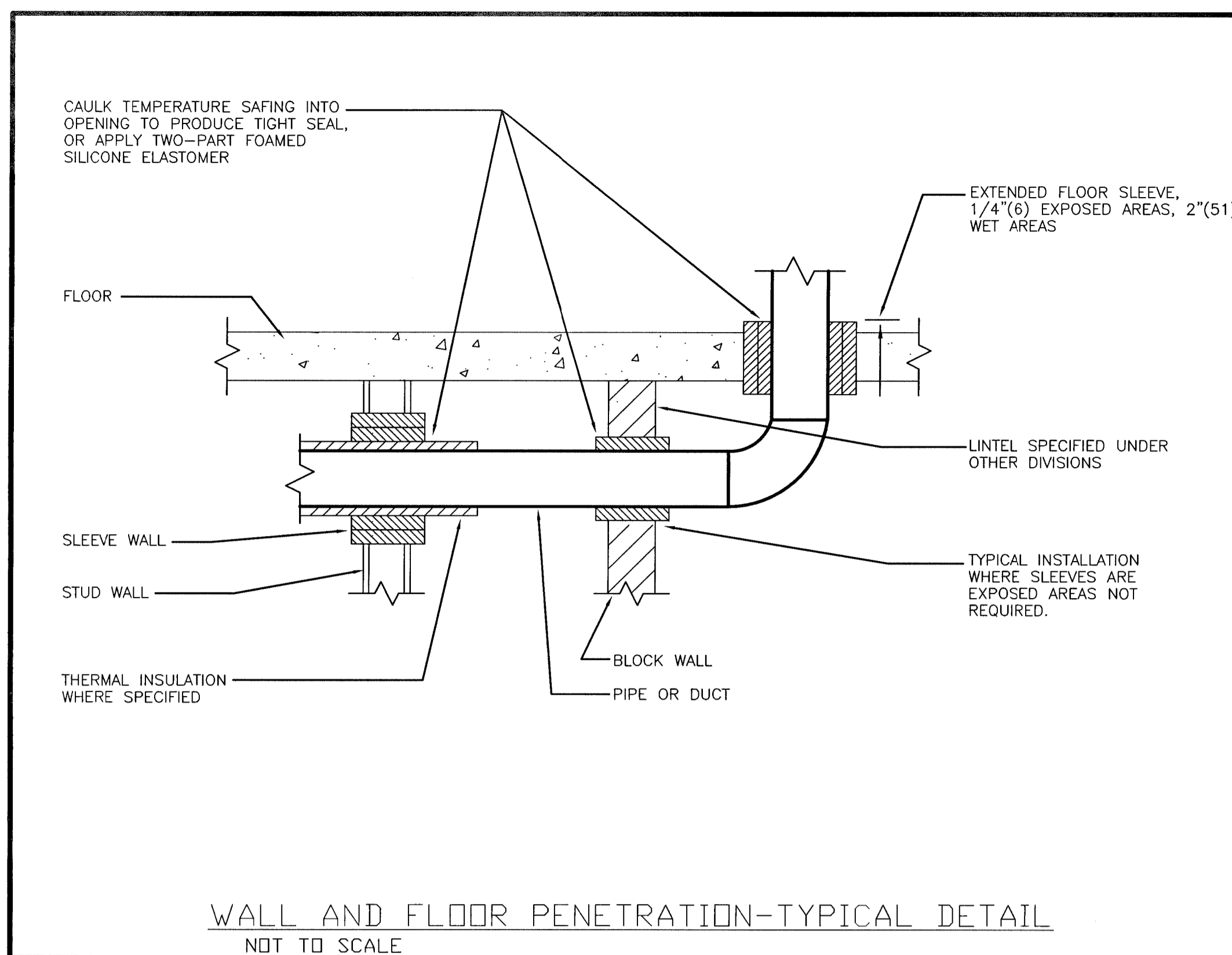


FIRE & SMOKE DAMPER-TYPICAL DETAIL
(ELECTRICAL)
NOT TO SCALE

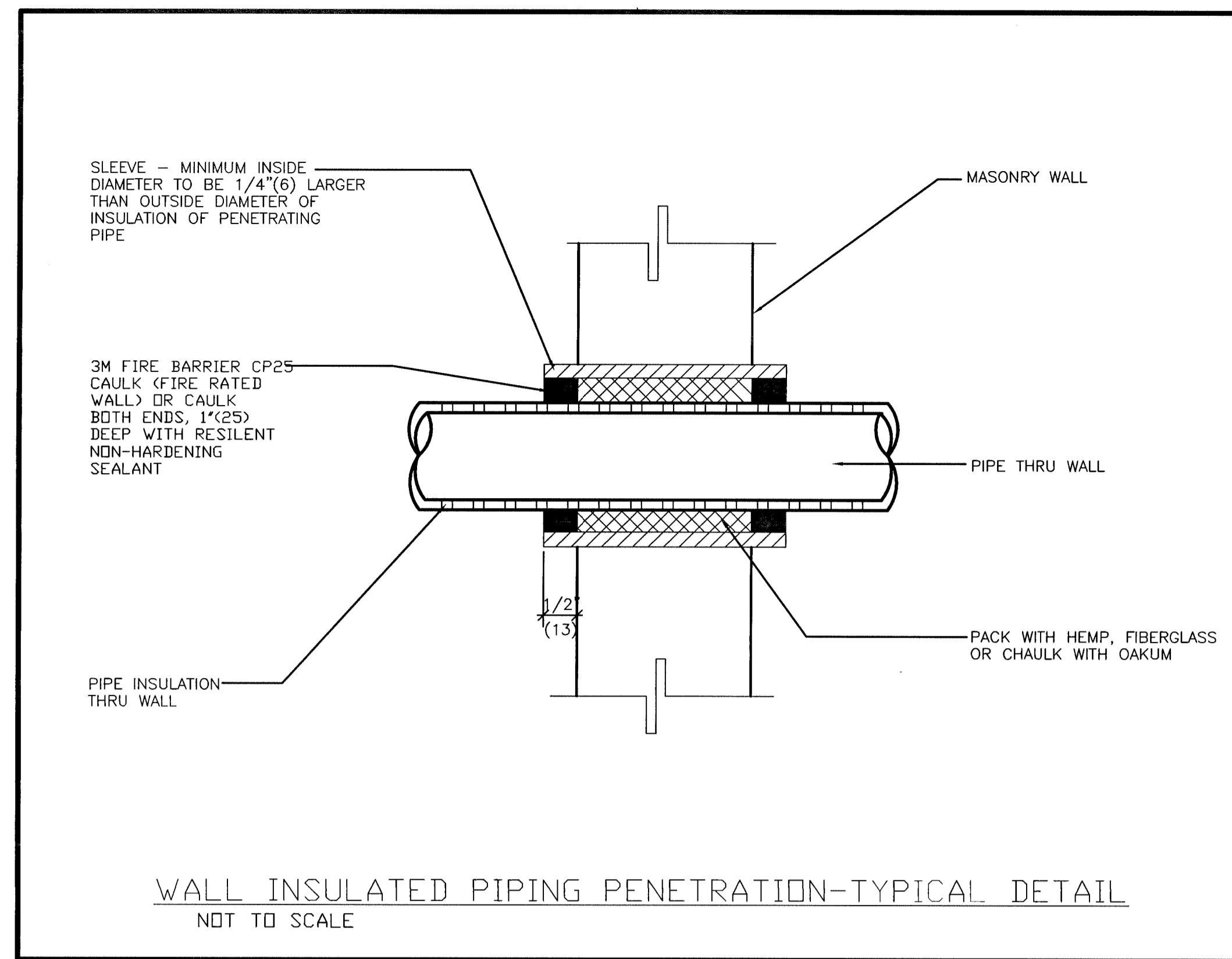


1. PROVIDE DUCT FULLY EXTENDED.
2. DO NOT INSTALL IN COMPRESSED STATE OR EXCESS LENGTH.
3. AVOID BENDING DUCTS ACROSS SHARP CORNERS OR INCIDENTAL CONTACT WITH METAL FIXTURES, PIPES OR CONDUITS OR SUSPENSION WIRES FOR HUNG CEILINGS.
4. RADIUS AT CENTER SHALL NOT BE LESS THAN ONE DUCT DIAMETER.
5. STRAIGHT SECTIONS SHALL NOT HAVE MORE THAN 1/2" (13) PER FOOT (305) OF SAG BETWEEN SUPPORT SPACING.
6. WIRES SHALL NOT BE USED UNDER DUCT TO SUPPORT FLEX PORTION.
7. 1-1/2" (38) MIN. WIDTH OF STRAP SHALL BE USED TO SUPPORT THE DUCT.
8. SUPPORT THE DUCT BETWEEN A METAL CONNECTION AND A BEND BY ALLOWING THE DUCT TO EXTEND STRAIGHT FOR A FEW INCHES BEFORE MAKING THE BEND.
9. HANGERS SHALL NOT BE SPACED MORE THAN 5' (1524) APART FROM EACH OTHER.
10. FLEX DUCT NOT TO EXCEED 8 FT (2438) IN LENGTH EXCEPT DUCT USED FOR TEMPORARY USE.

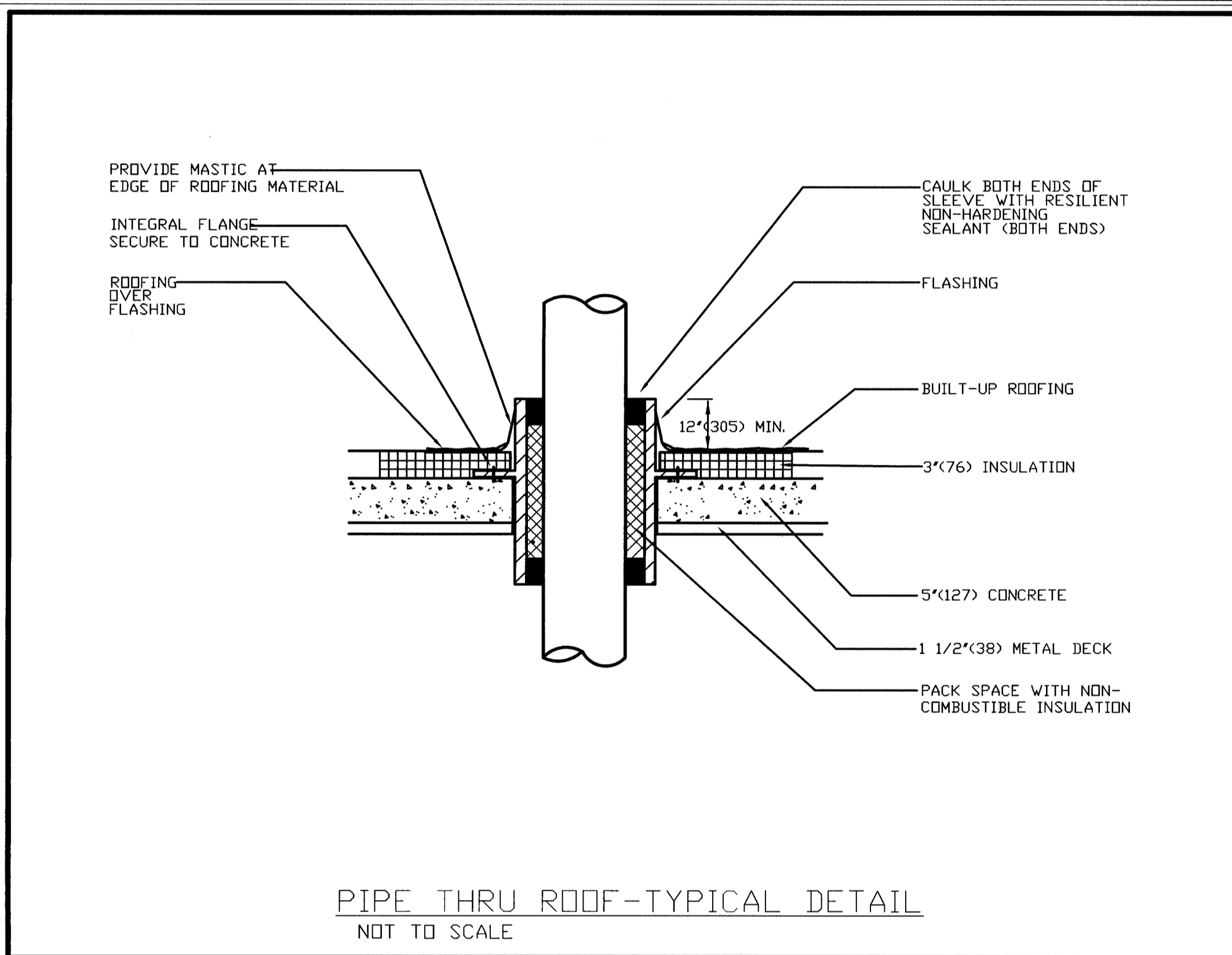
FLEXIBLE DUCT INSTALLATION - TYPICAL DETAIL
NOT TO SCALE



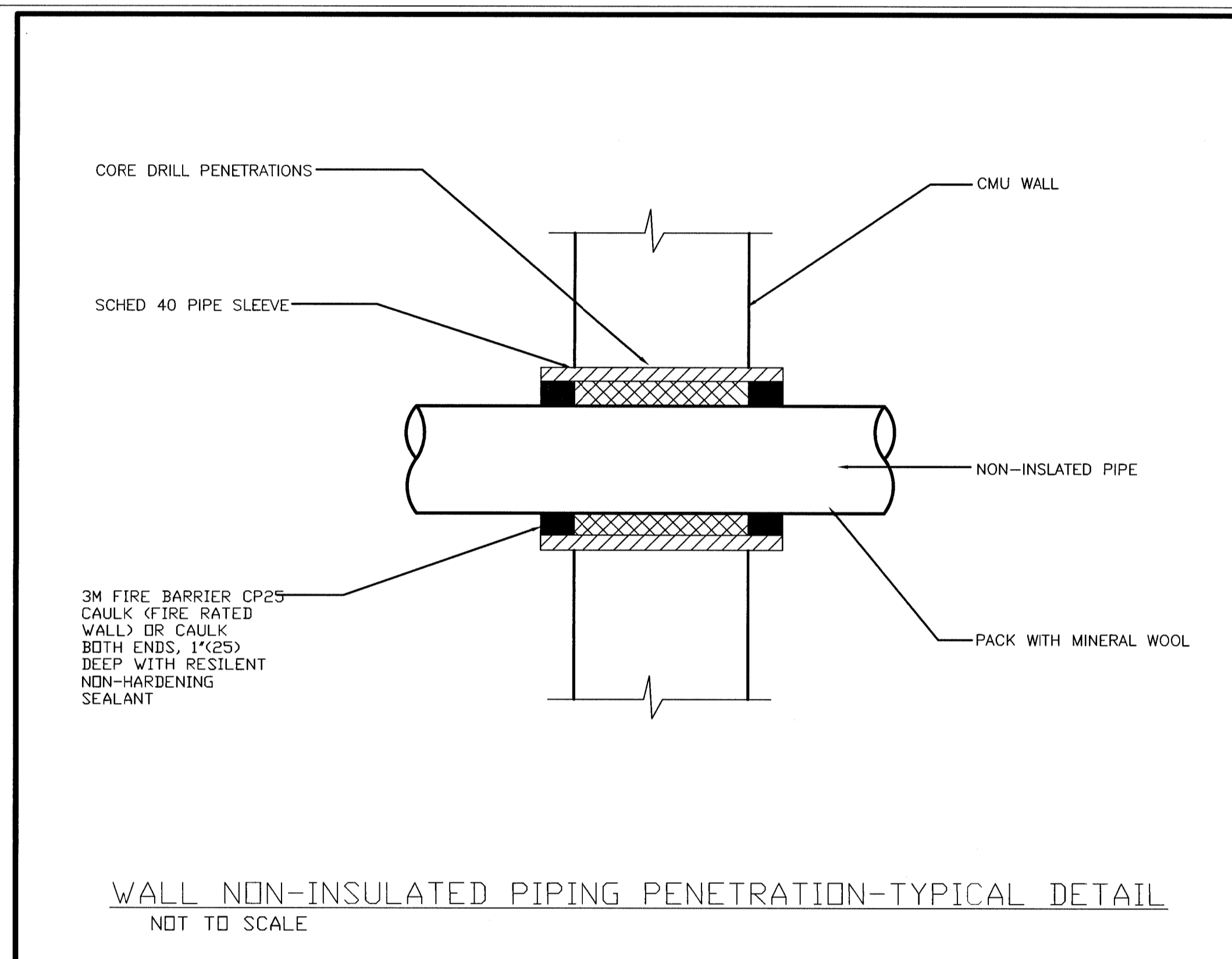
WALL AND FLOOR PENETRATION-TYPICAL DETAIL
NOT TO SCALE



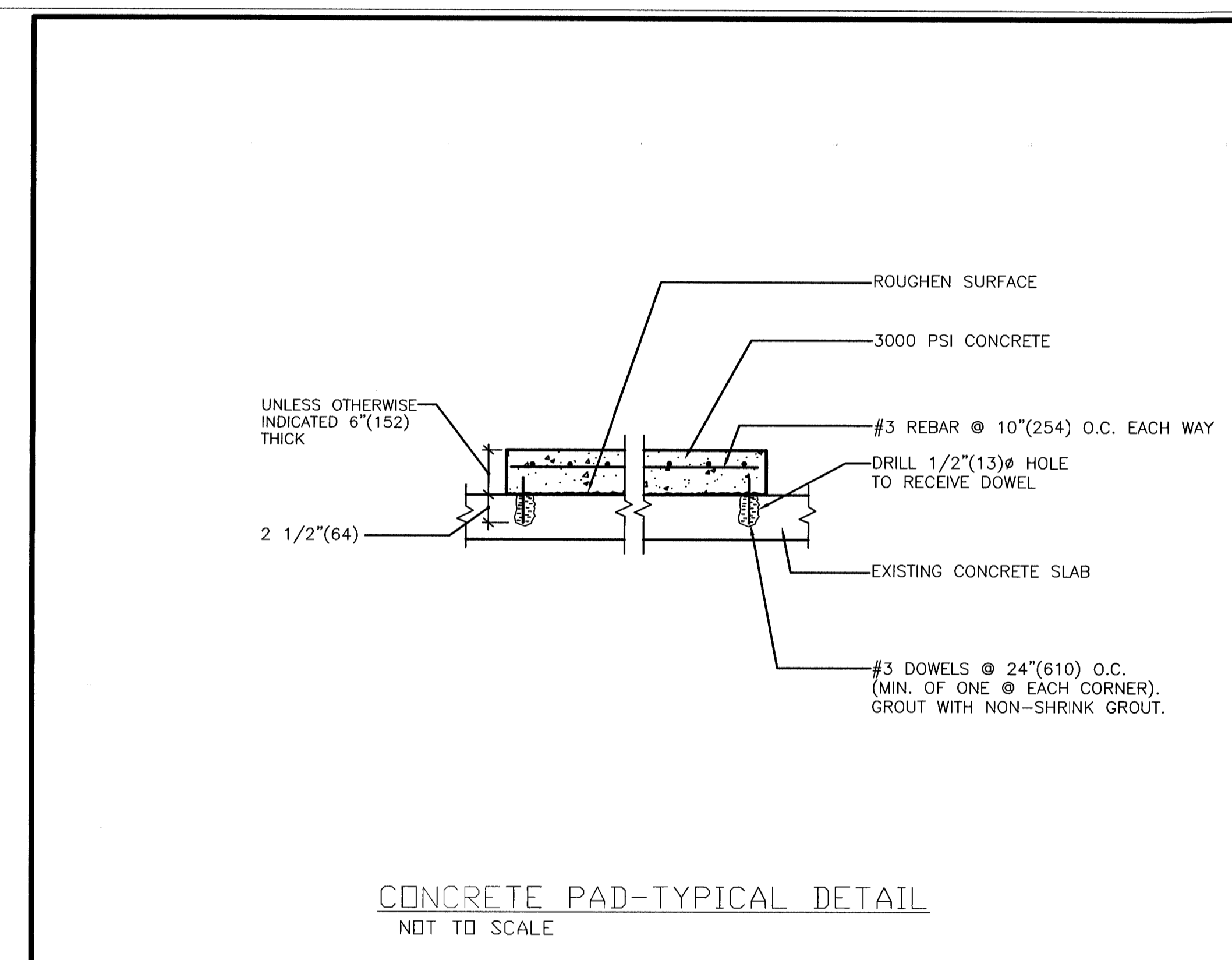
WALL INSULATED PIPING PENETRATION-TYPICAL DETAIL
NOT TO SCALE



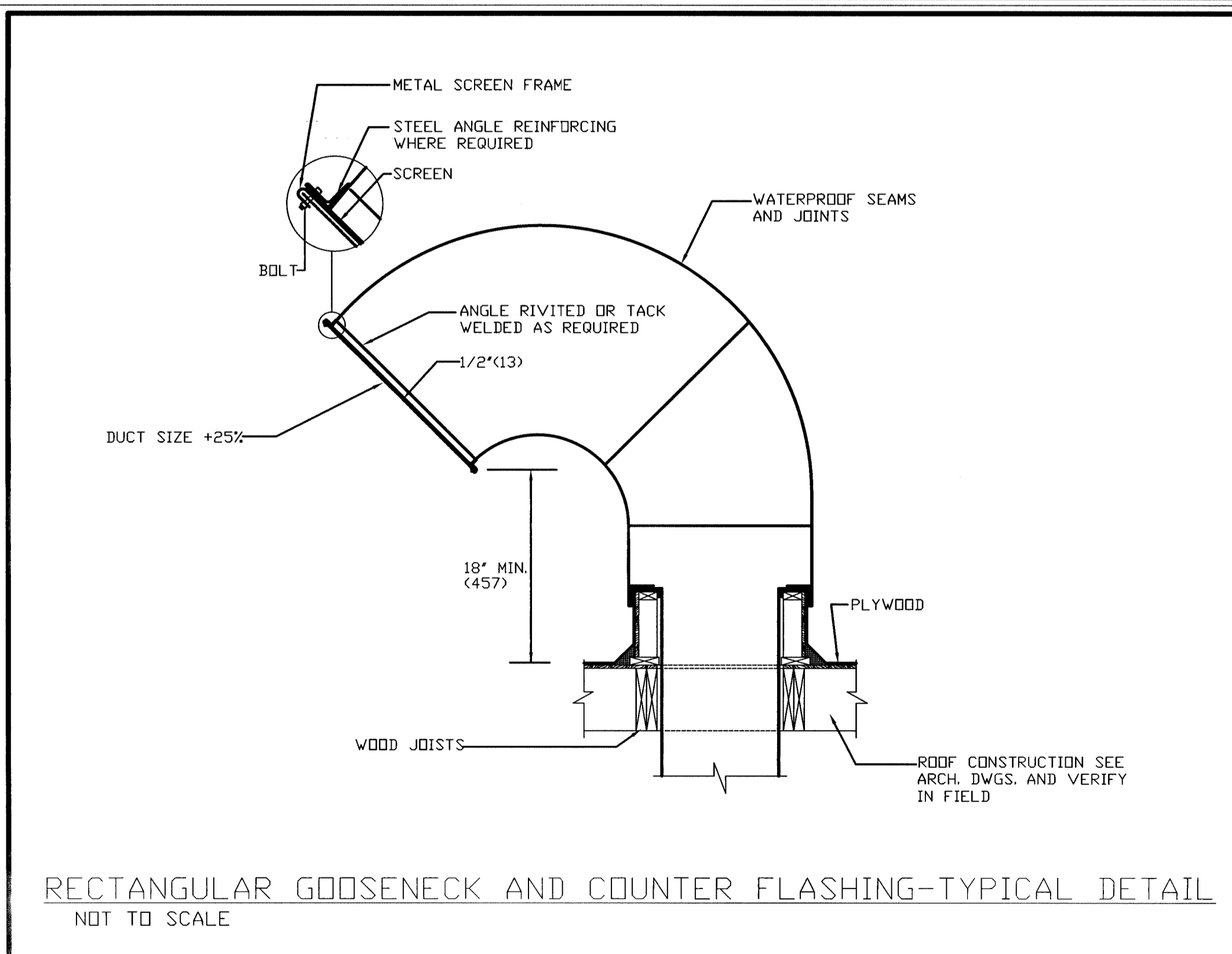
PIPE THRU ROOF-TYPICAL DETAIL
NOT TO SCALE



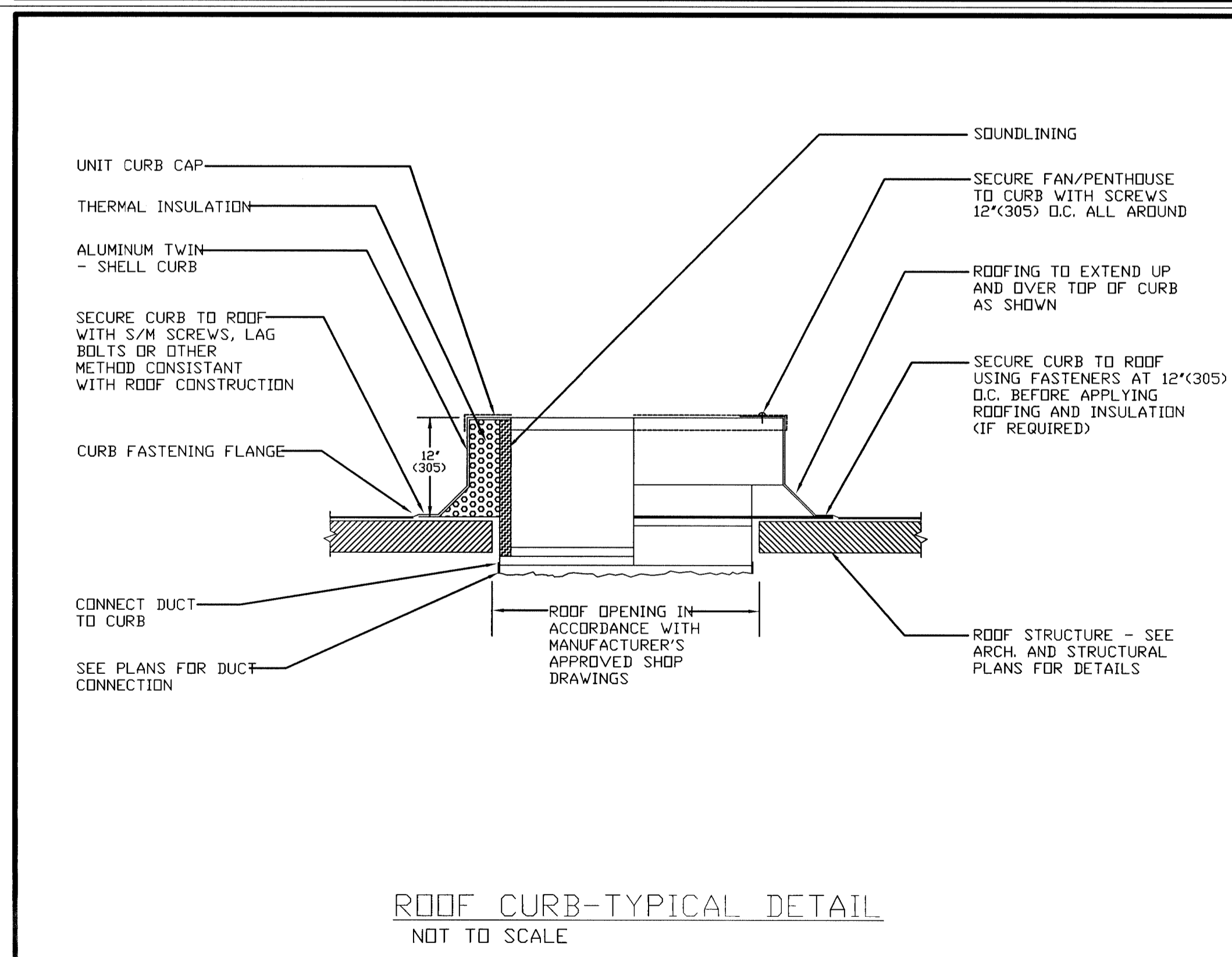
WALL NON-INSULATED PIPING PENETRATION-TYPICAL DETAIL
NOT TO SCALE



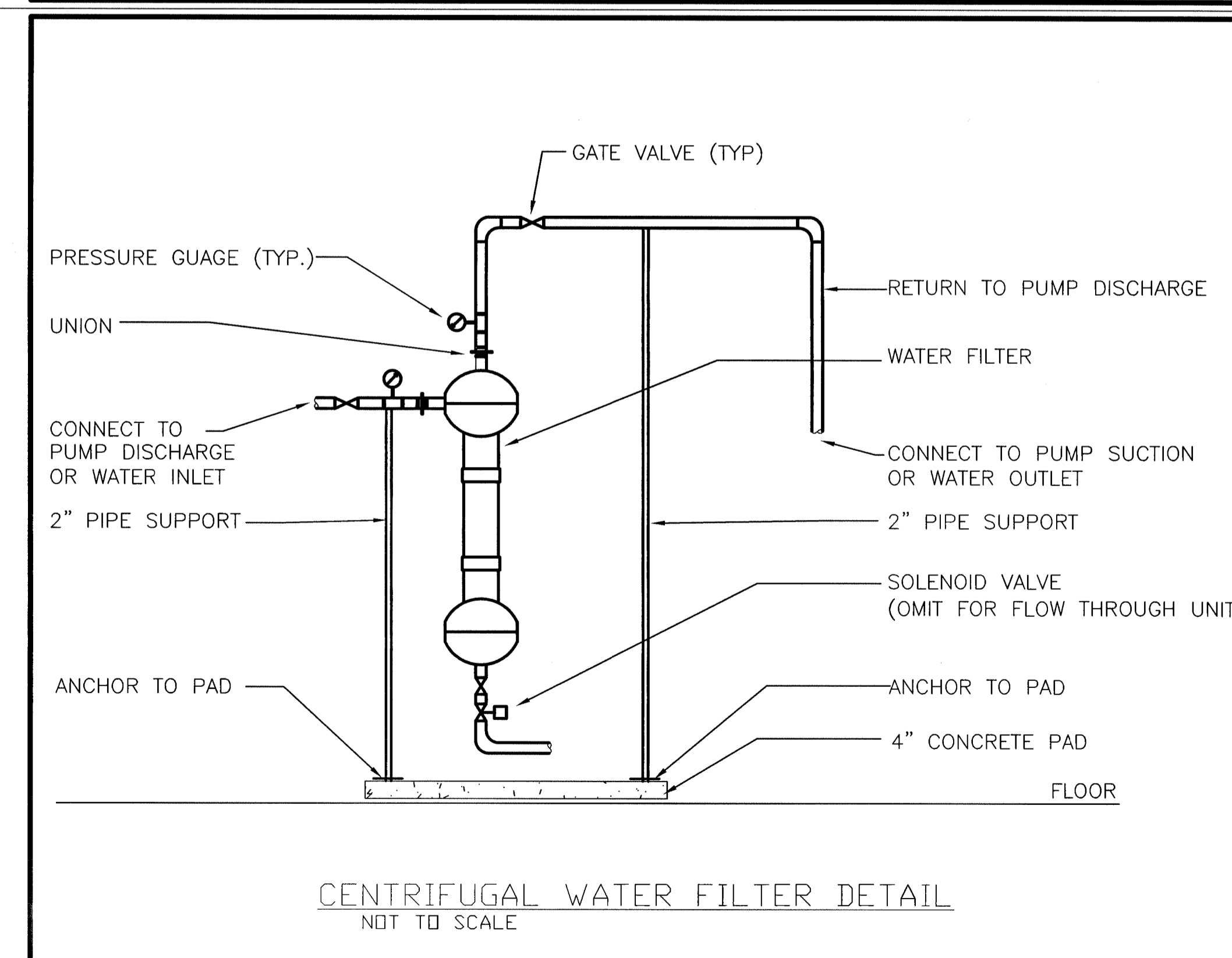
CONCRETE PAD-TYPICAL DETAIL
NOT TO SCALE



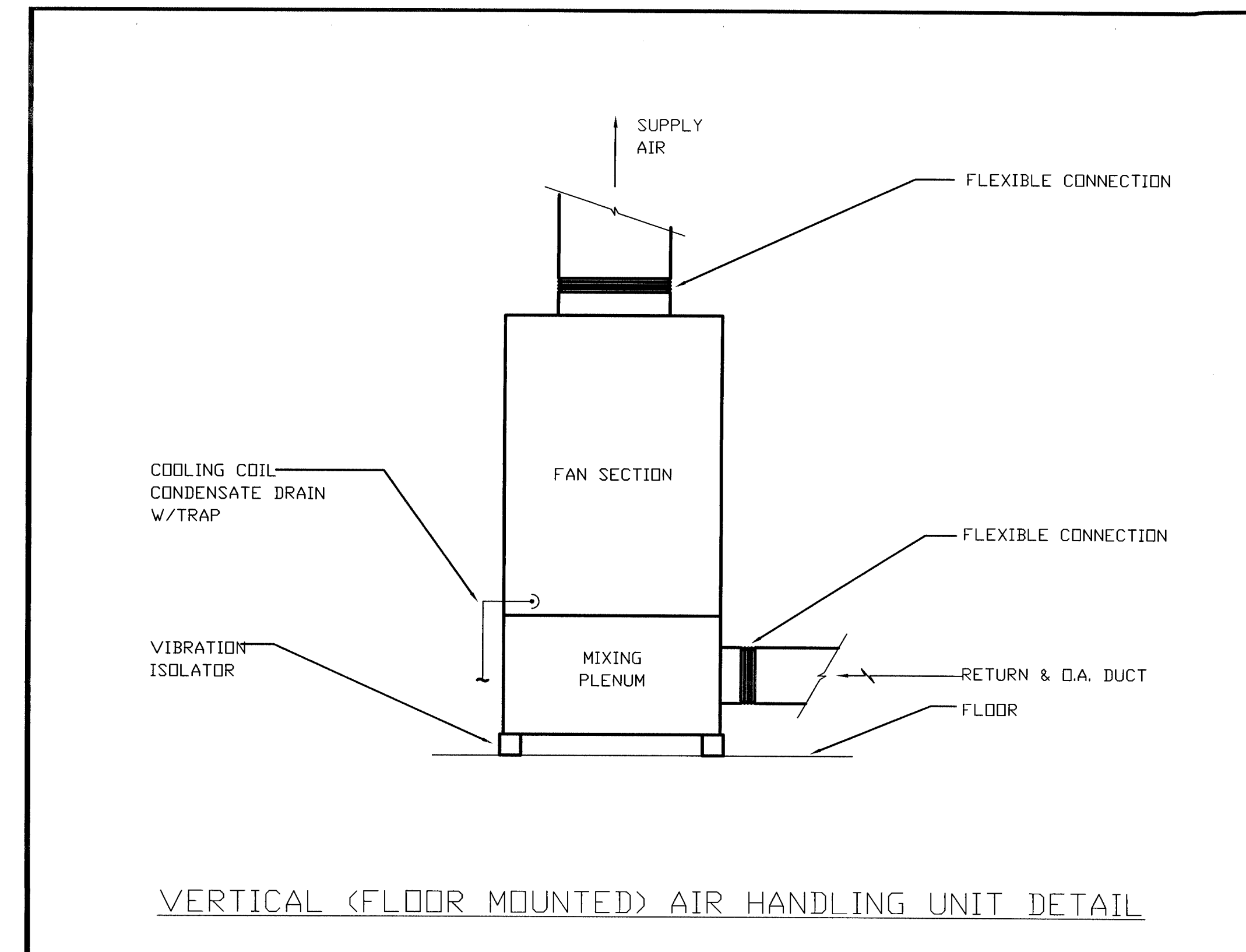
RECTANGULAR GOOSENECK AND COUNTER FLASHING-TYPICAL DETAIL
NOT TO SCALE



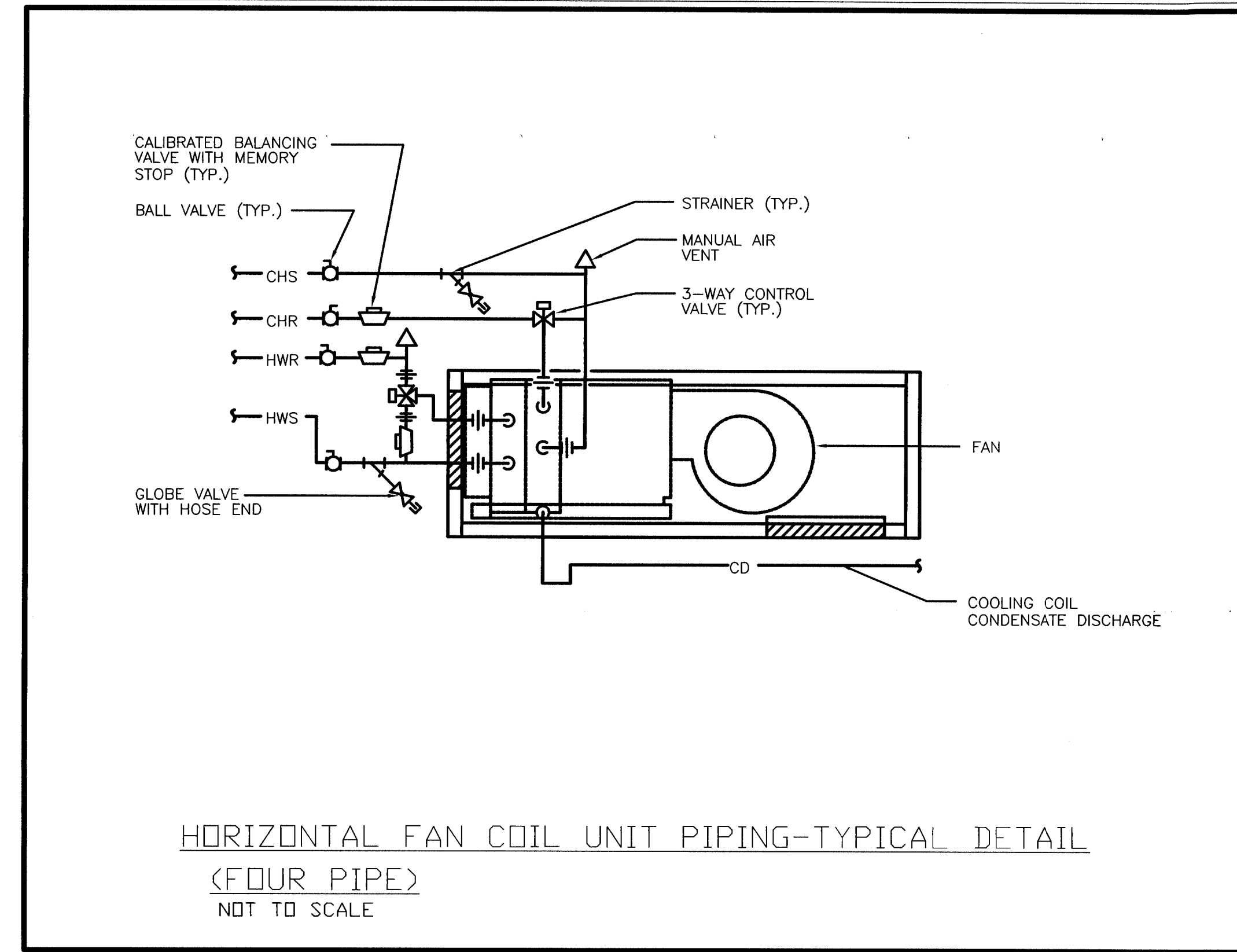
ROOF CURB-TYPICAL DETAIL
NOT TO SCALE



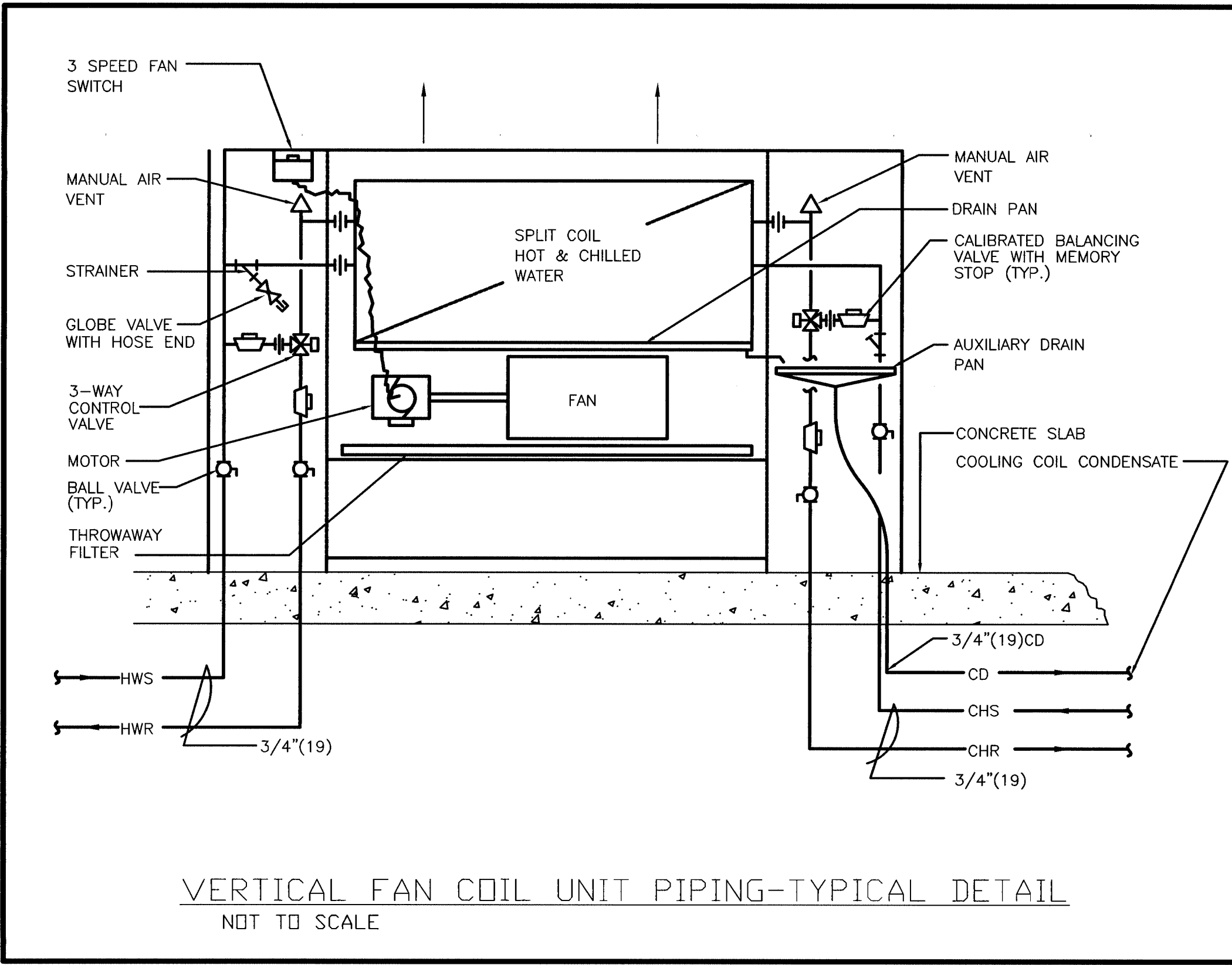
CENTRIFUGAL WATER FILTER DETAIL
NOT TO SCALE



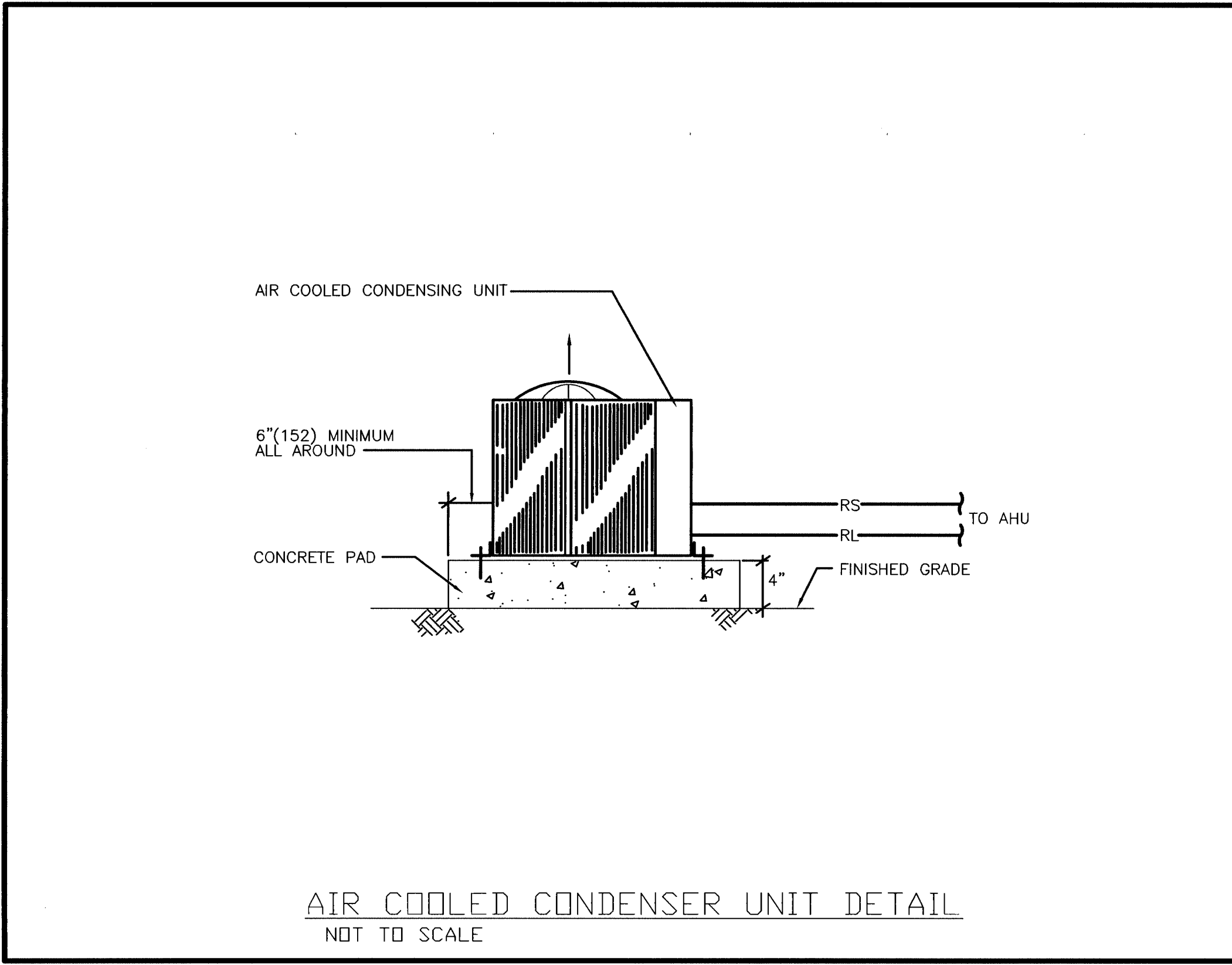
VERTICAL (FLOOR MOUNTED) AIR HANDLING UNIT DETAIL



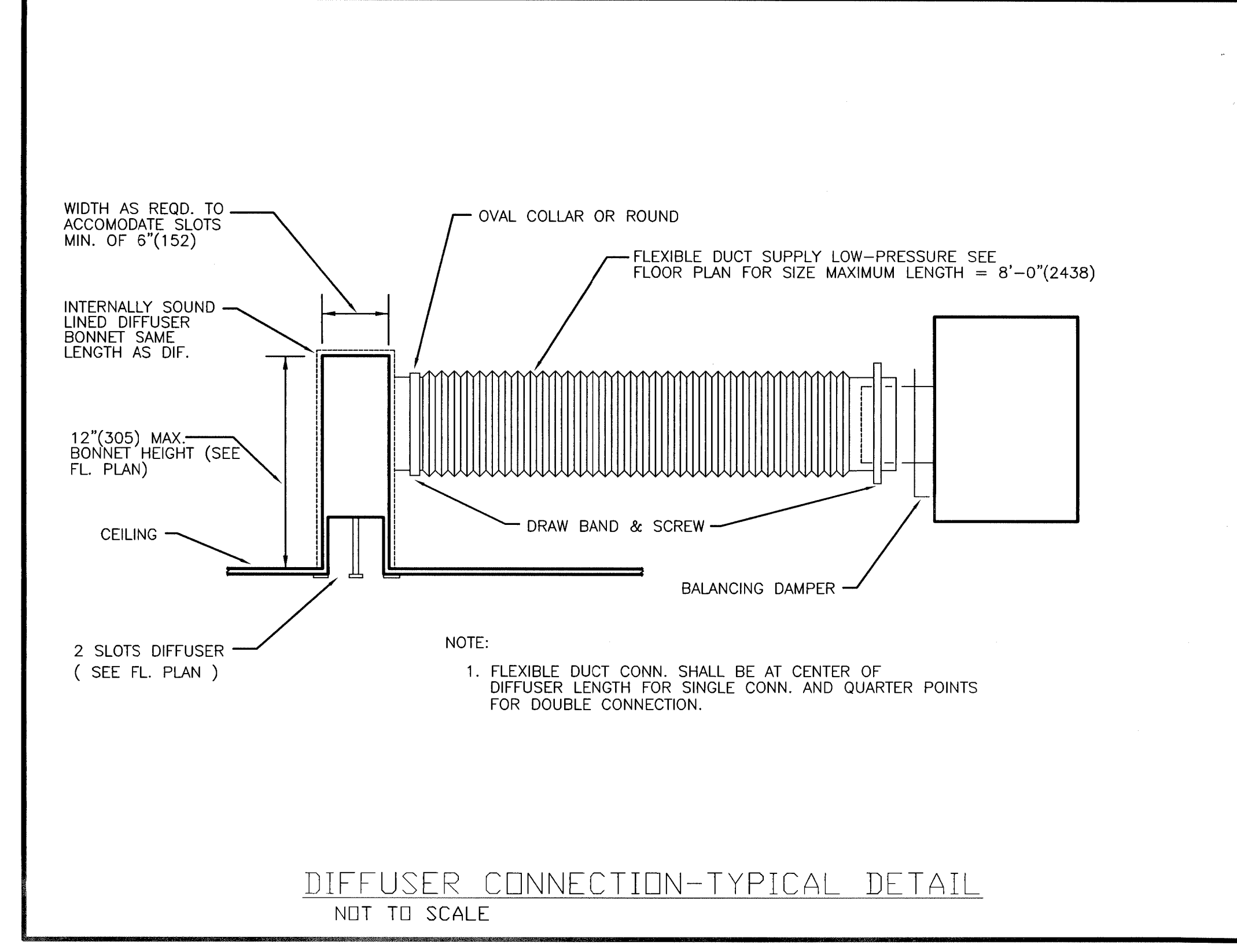
HORIZONTAL FAN COIL UNIT PIPING-TYPICAL DETAIL
 (FOUR PIPE)
 NOT TO SCALE



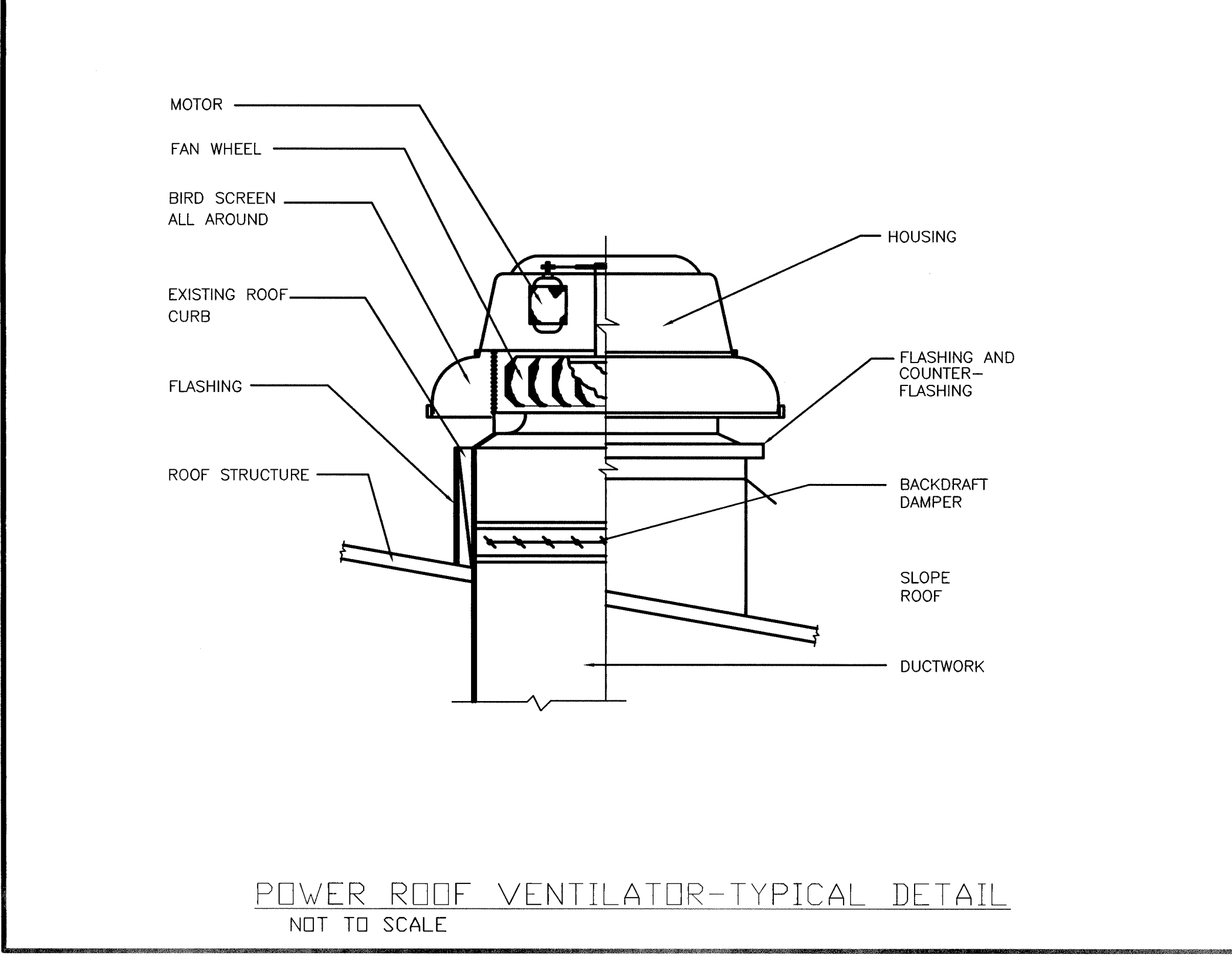
VERTICAL FAN COIL UNIT PIPING-TYPICAL DETAIL
 NOT TO SCALE



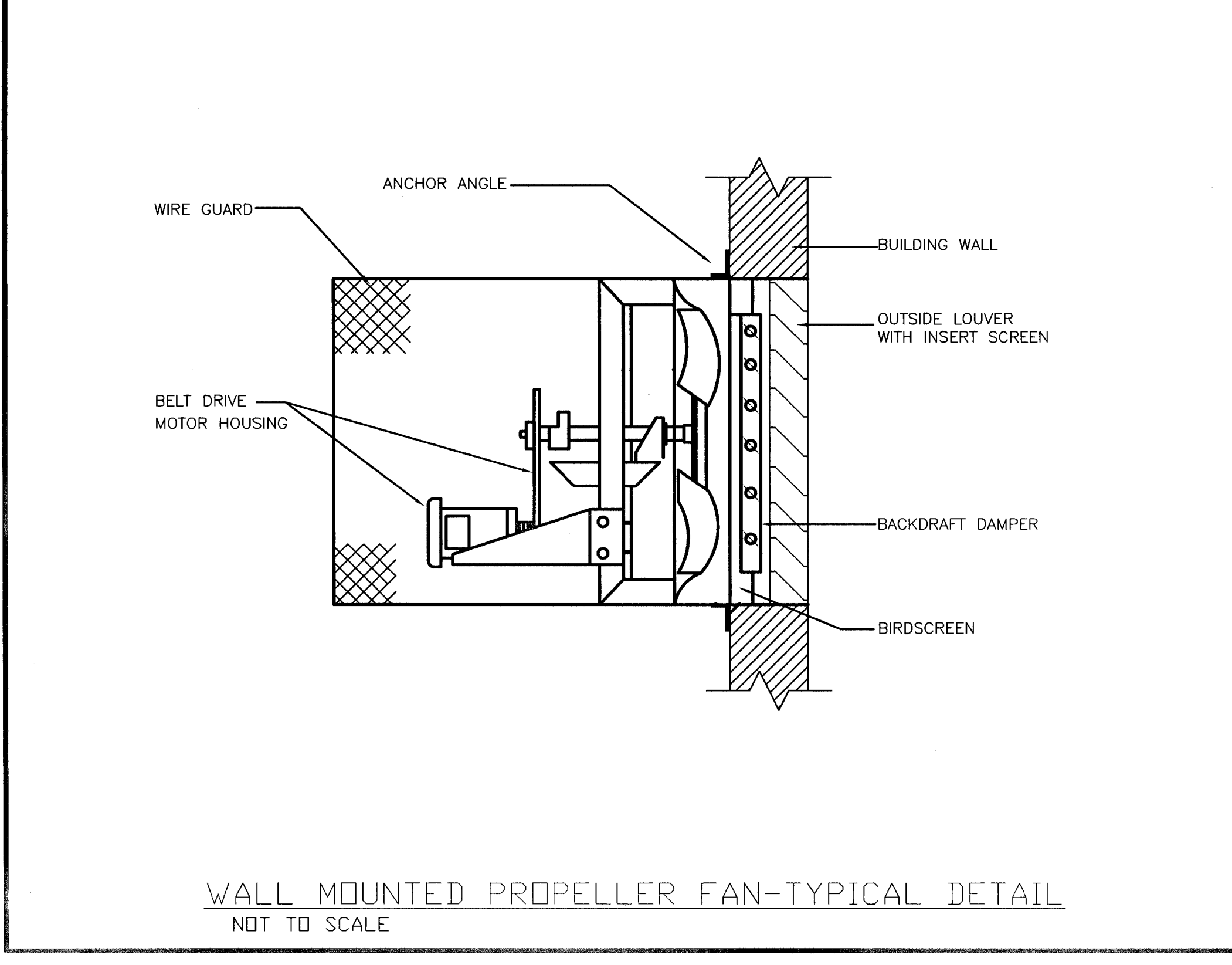
AIR COOLED CONDENSER UNIT DETAIL
 NOT TO SCALE



DIFFUSER CONNECTION-TYPICAL DETAIL
 NOT TO SCALE

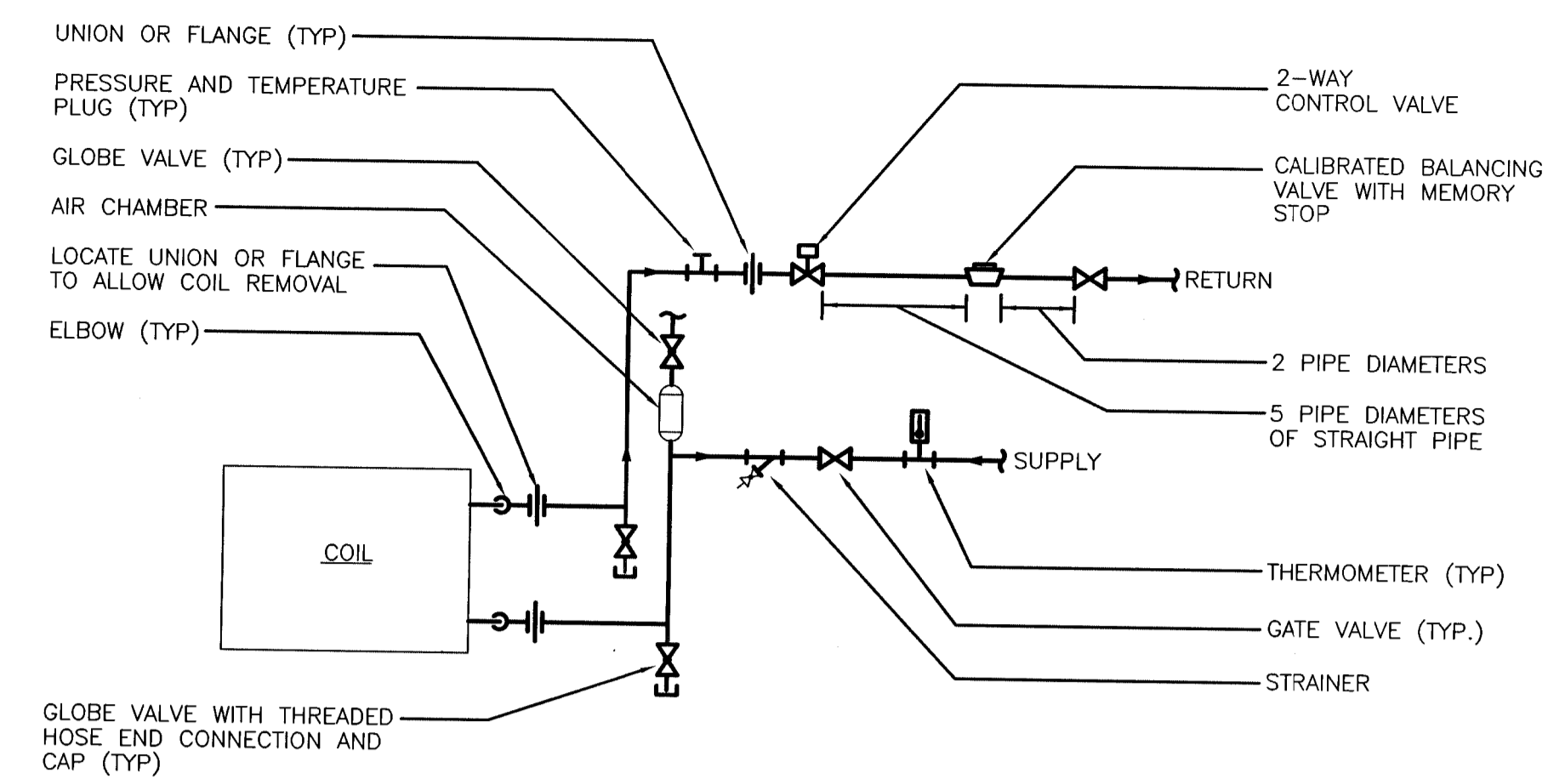


POWER ROOF VENTILATOR-TYPICAL DETAIL
 NOT TO SCALE

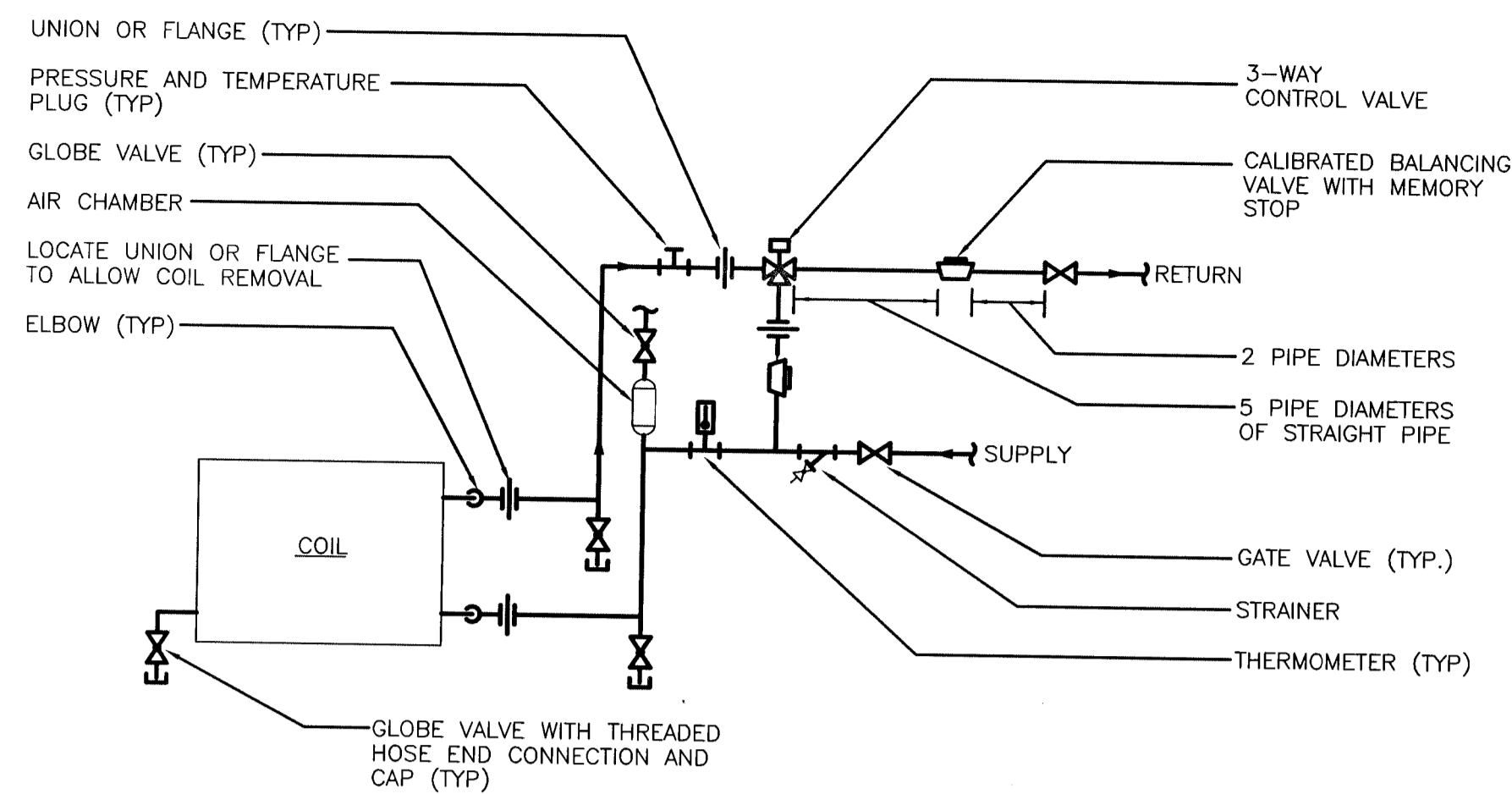


WALL MOUNTED PROPELLER FAN-TYPICAL DETAIL
 NOT TO SCALE

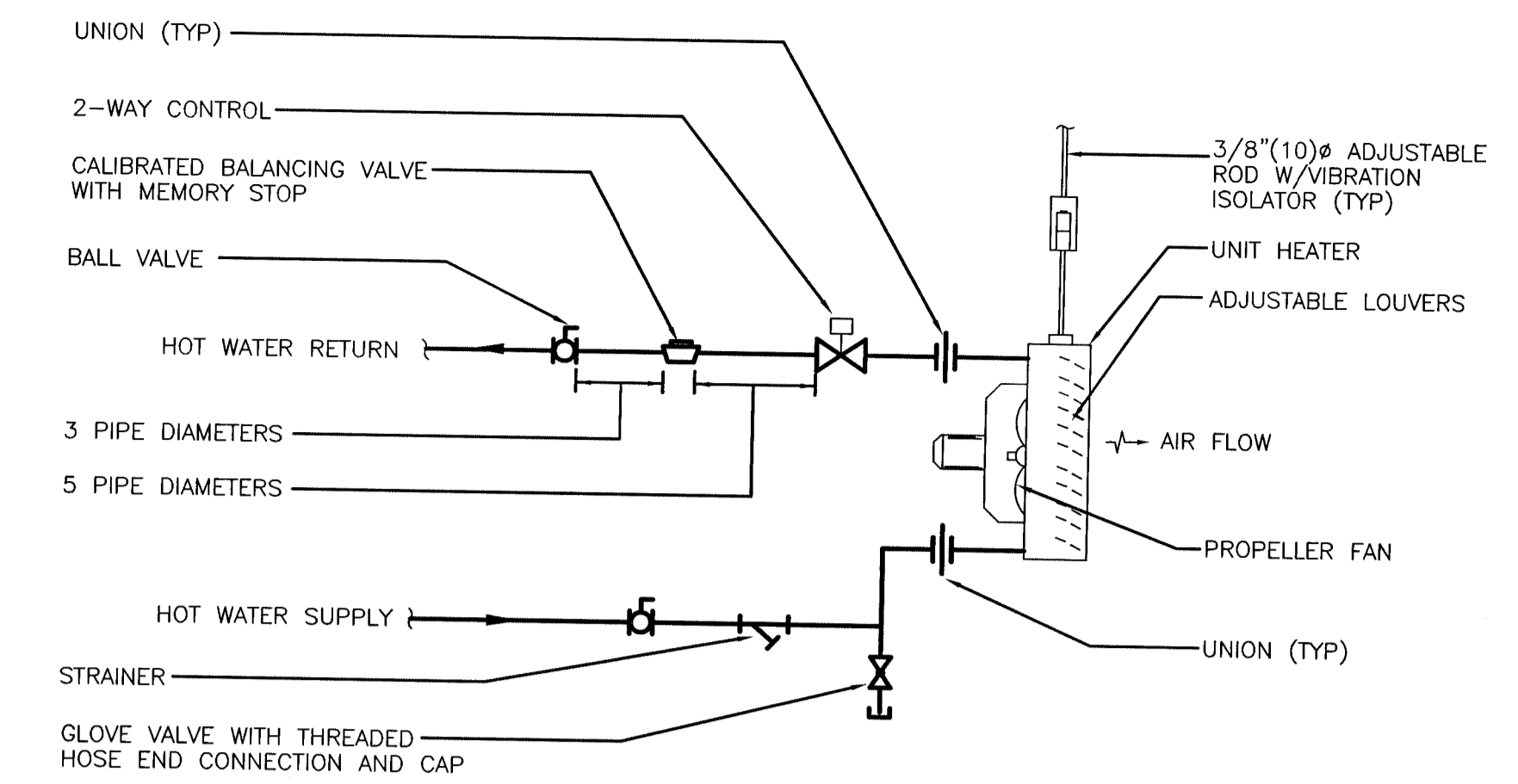
PROJECT RECORDS



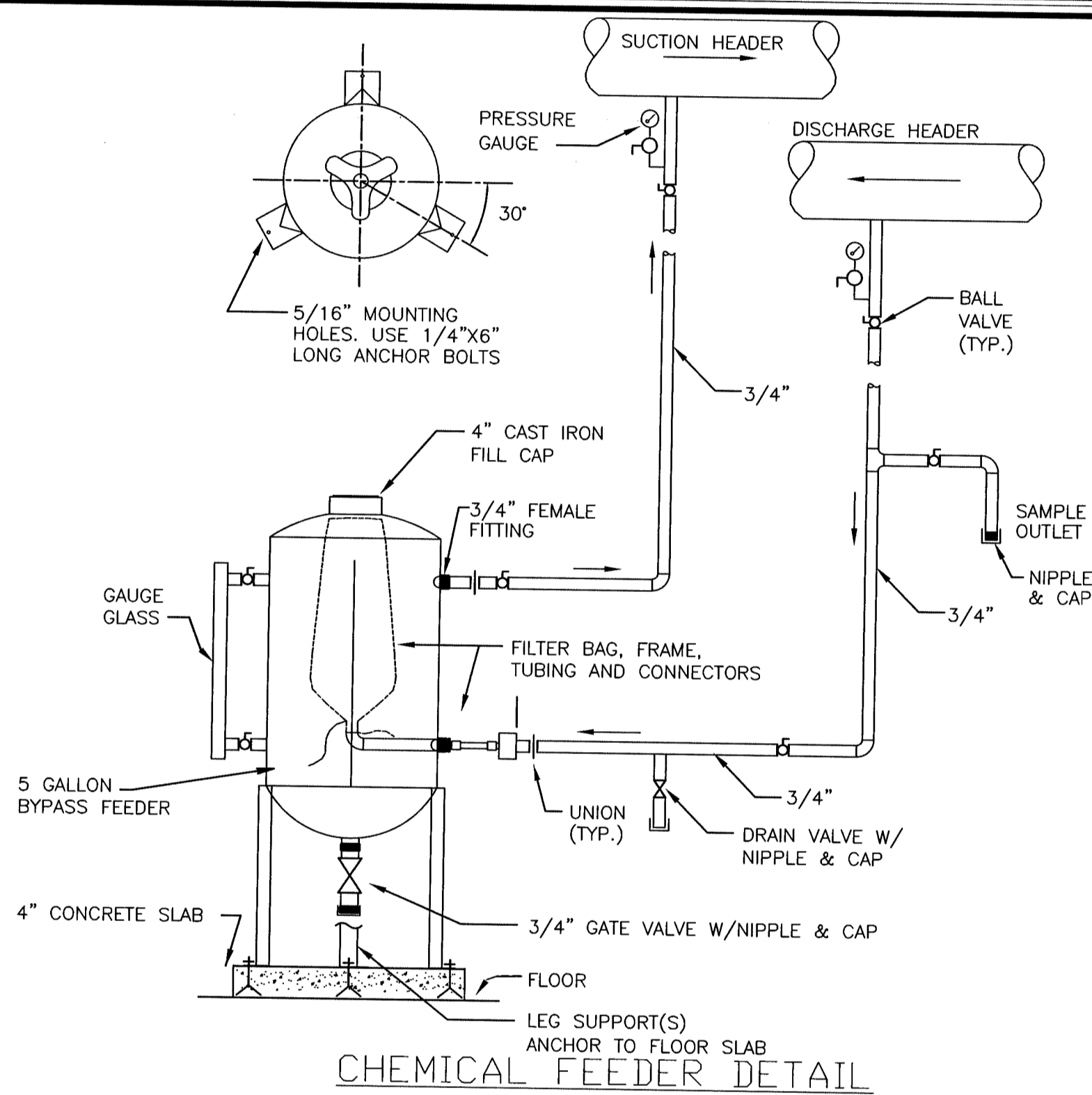
HOT WATER HEATING COIL PIPING-TYPICAL DETAIL
 NOT TO SCALE



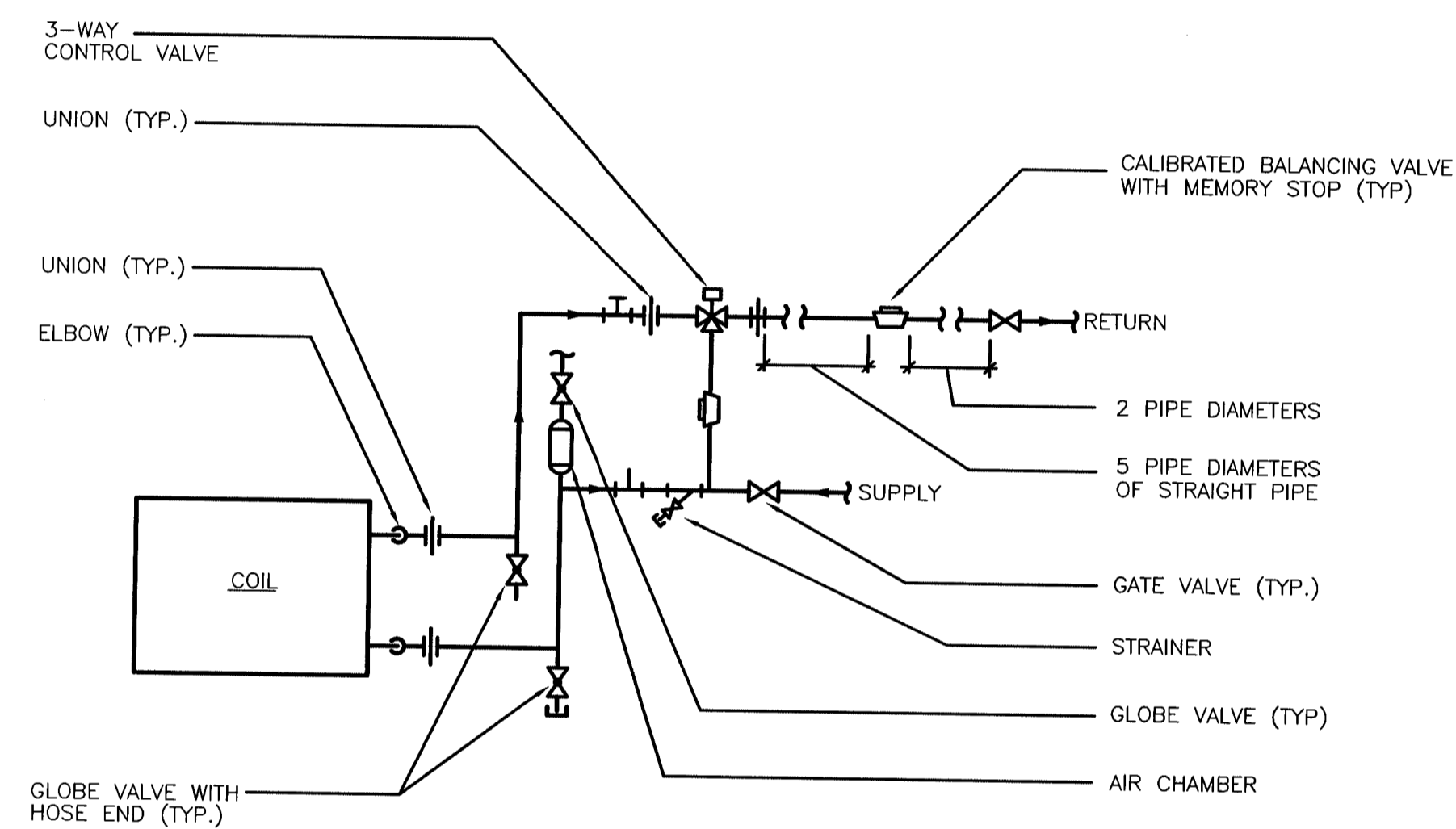
3 WAY HOT WATER HEATING COIL PIPING-DETAIL BY CALLOUT ONLY
 NOT TO SCALE



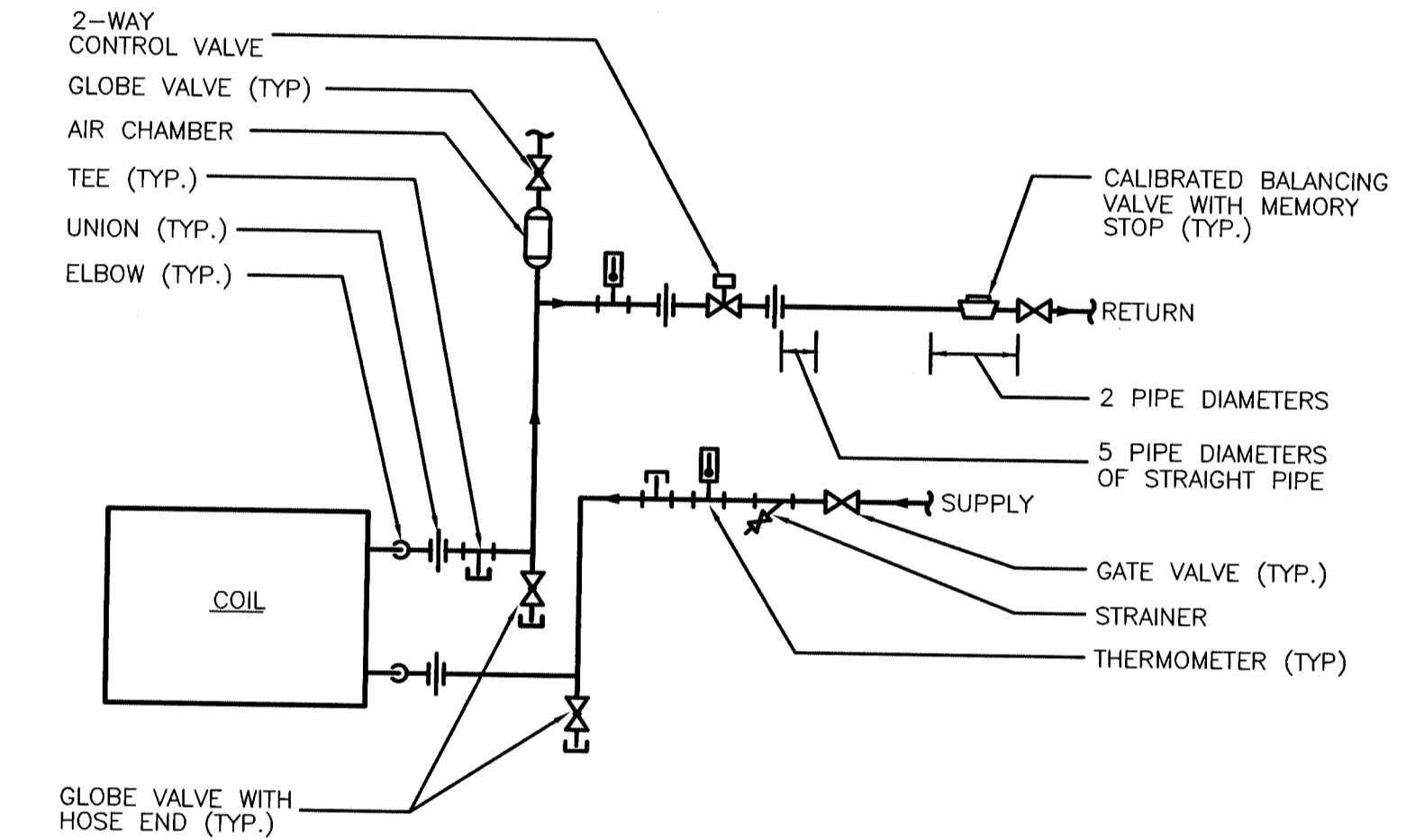
HOT WATER UNIT HEATER PIPING-TYPICAL DETAIL
 NOT TO SCALE



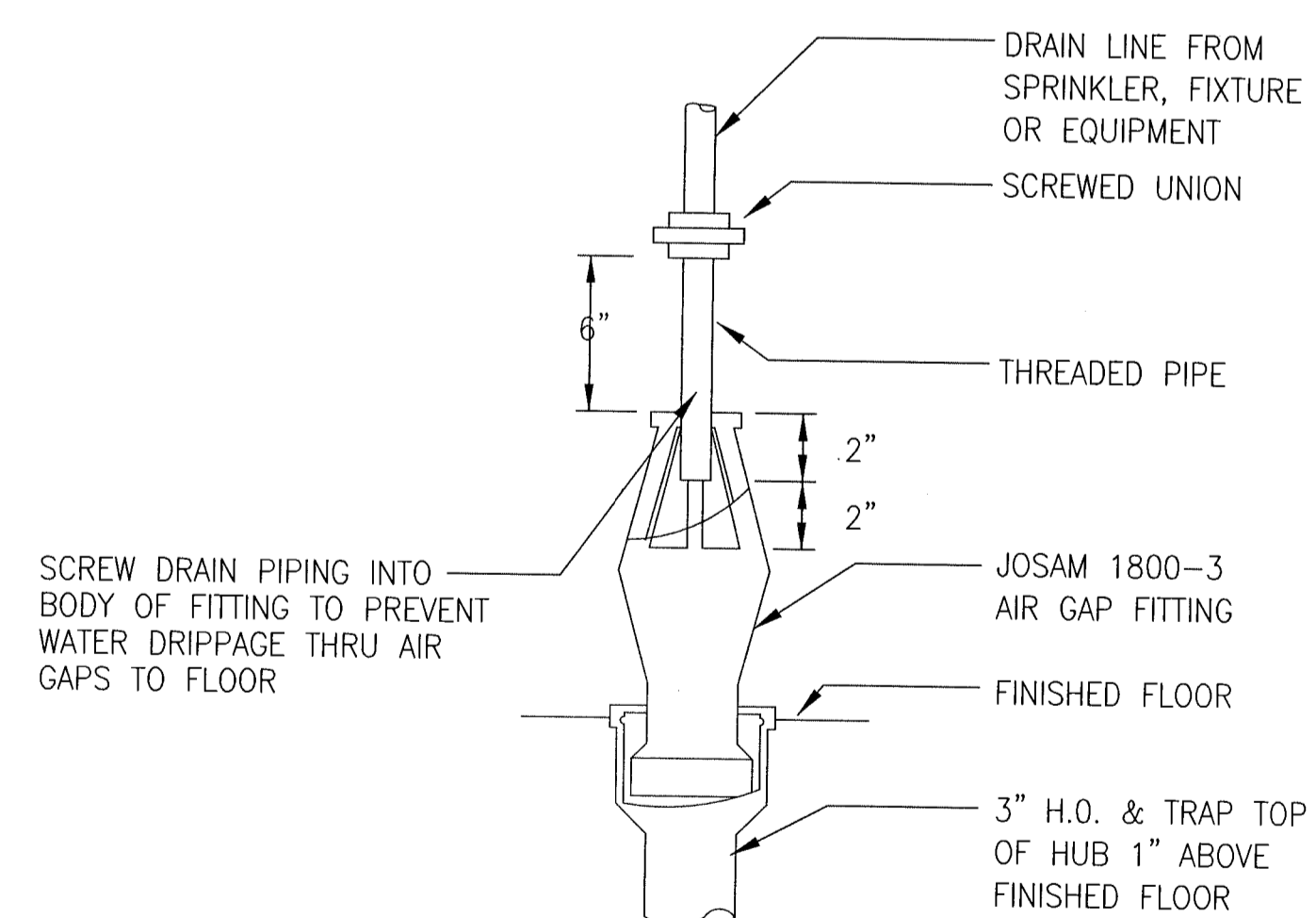
CHEMICAL FEEDER DETAIL



CHILLED WATER COIL PIPING DETAIL
 NOT TO SCALE

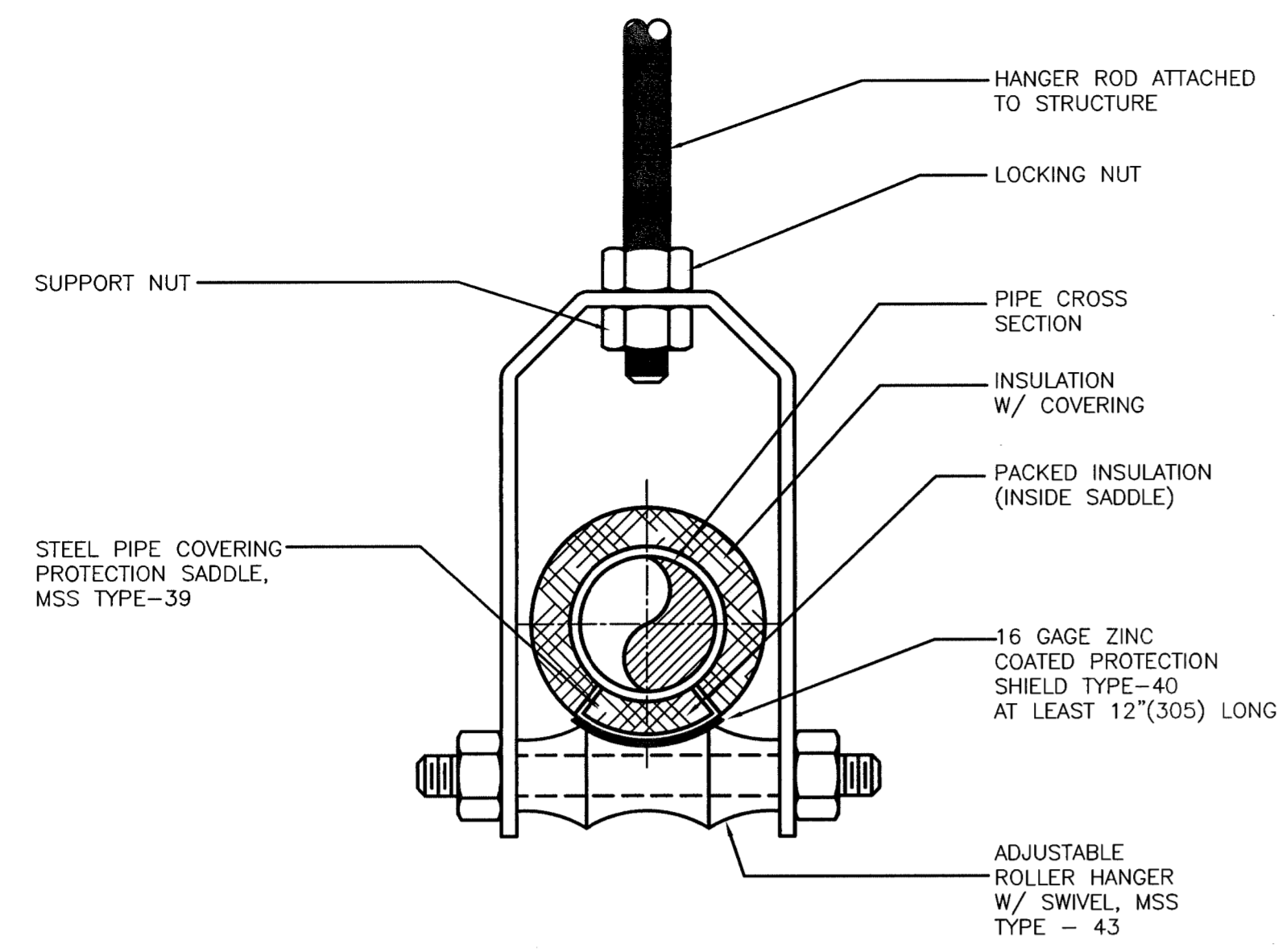


CHILLED WATER COIL PIPING DETAIL



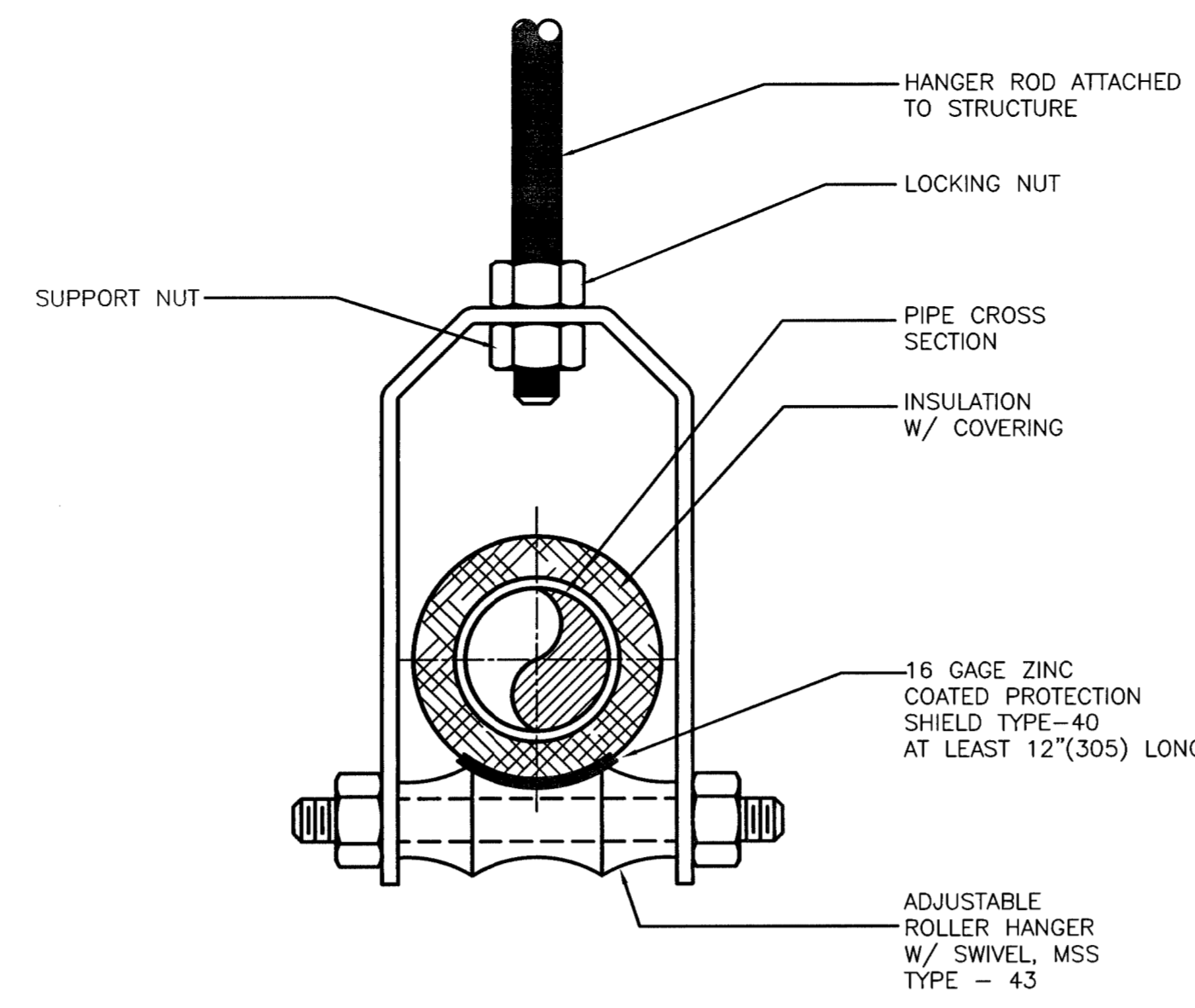
TYPICAL INDIRECT DRAIN CONNECTION

NOTE:
APPLIES TO INSULATED PIPING
2 1/2" (65) AND LARGER



PIPING HANGER-TYPICAL DETAIL
NOT TO SCALE

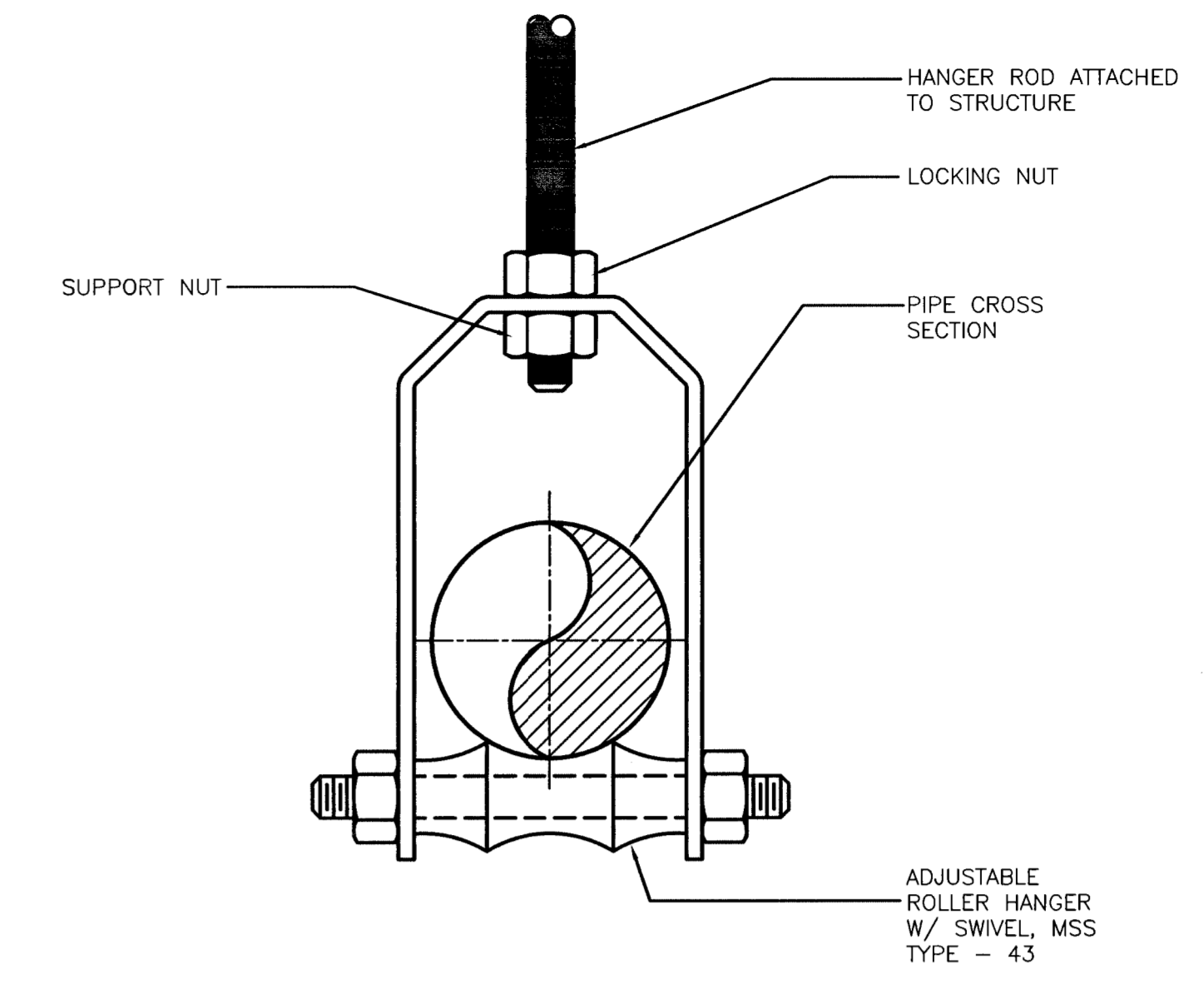
NOTE:
APPLIES TO INSULATED PIPING
UP TO 2" (50)



PIPING HANGER-TYPICAL DETAIL
NOT TO SCALE

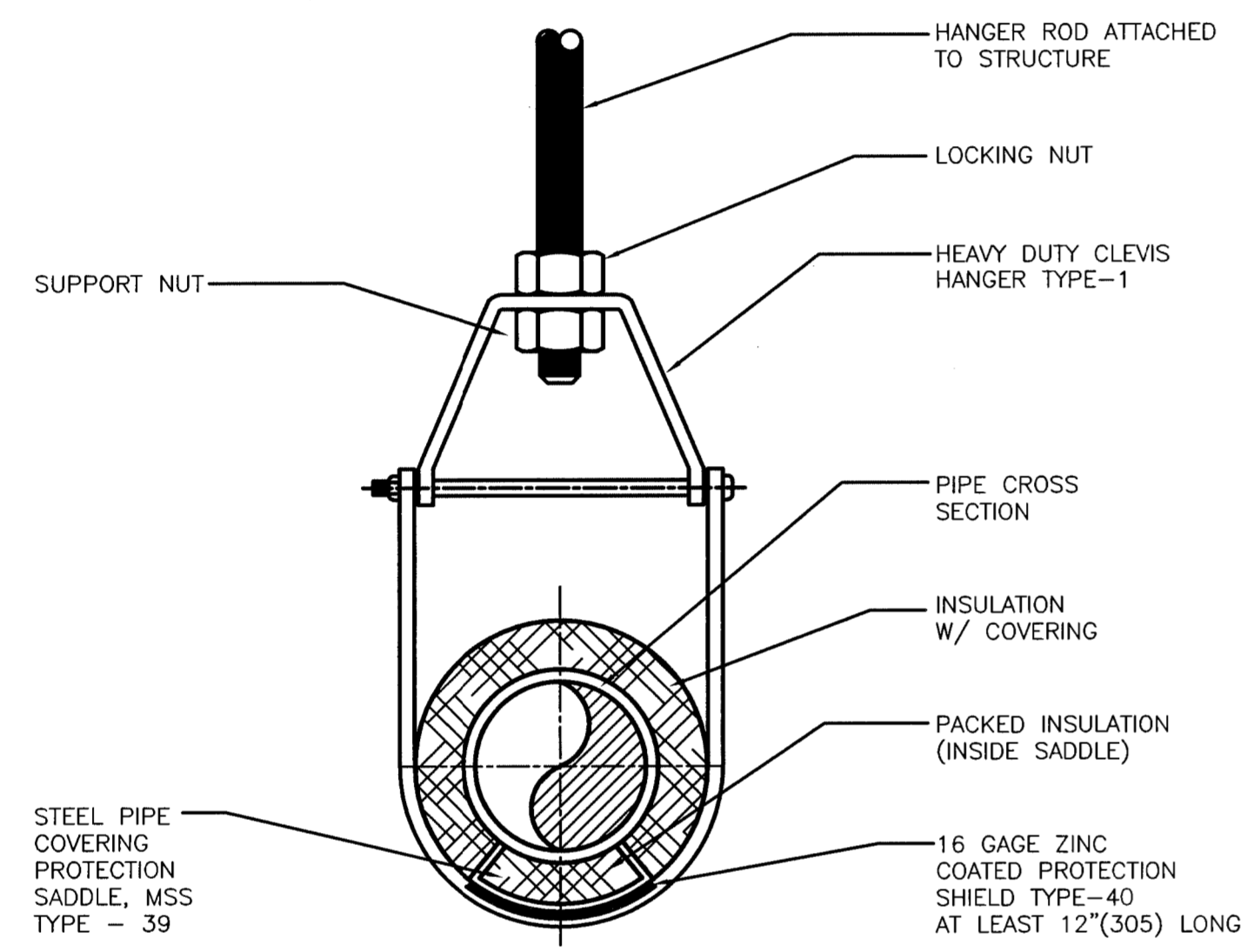
DETAIL: H&S-1A
7/31/01

NOTE:
APPLIES TO UNINSULATED PIPING
ALL SIZES



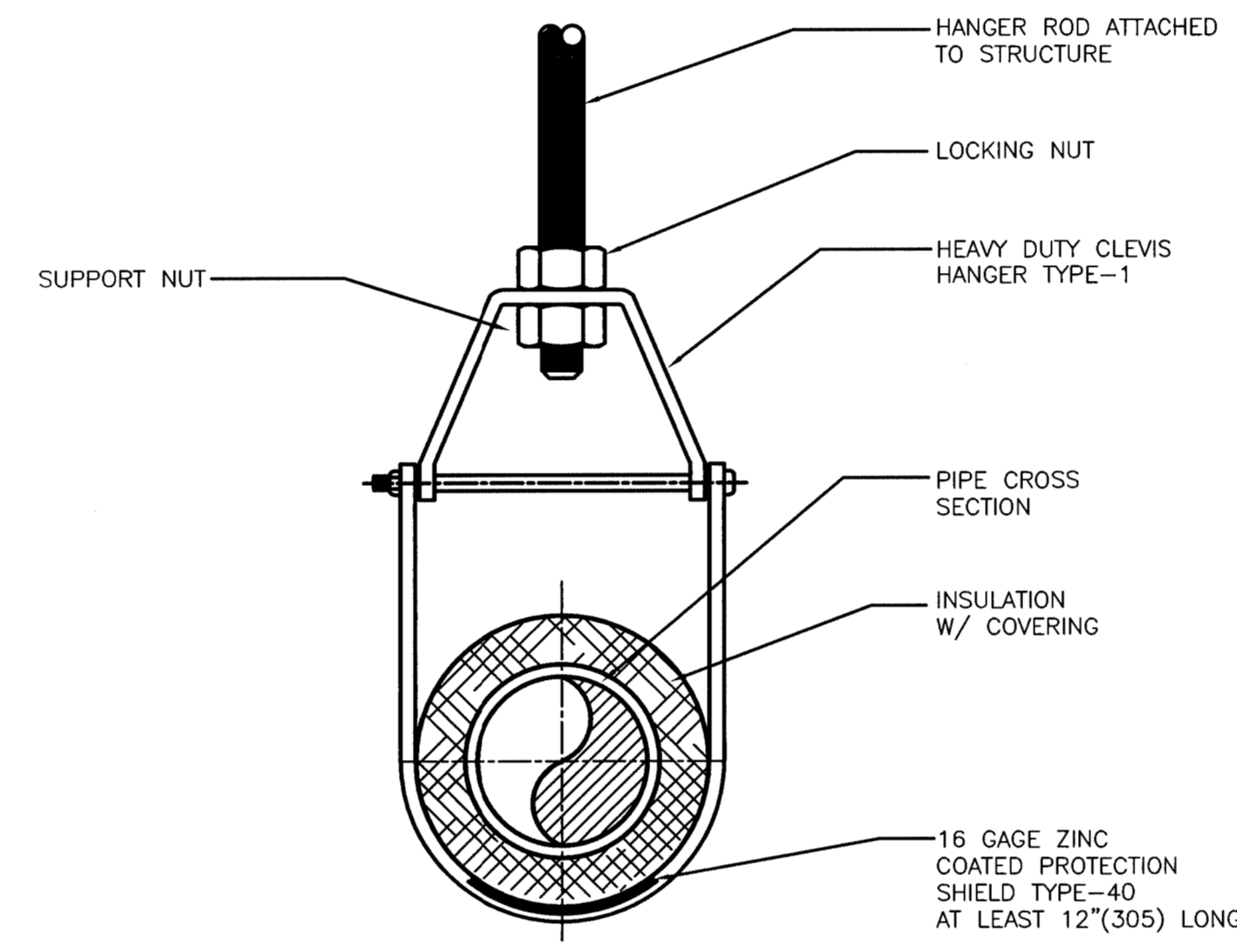
PIPING HANGER-TYPICAL DETAIL
NOT TO SCALE

NOTE:
APPLIES TO INSULATED PIPING
2 1/2" (65) AND LARGER



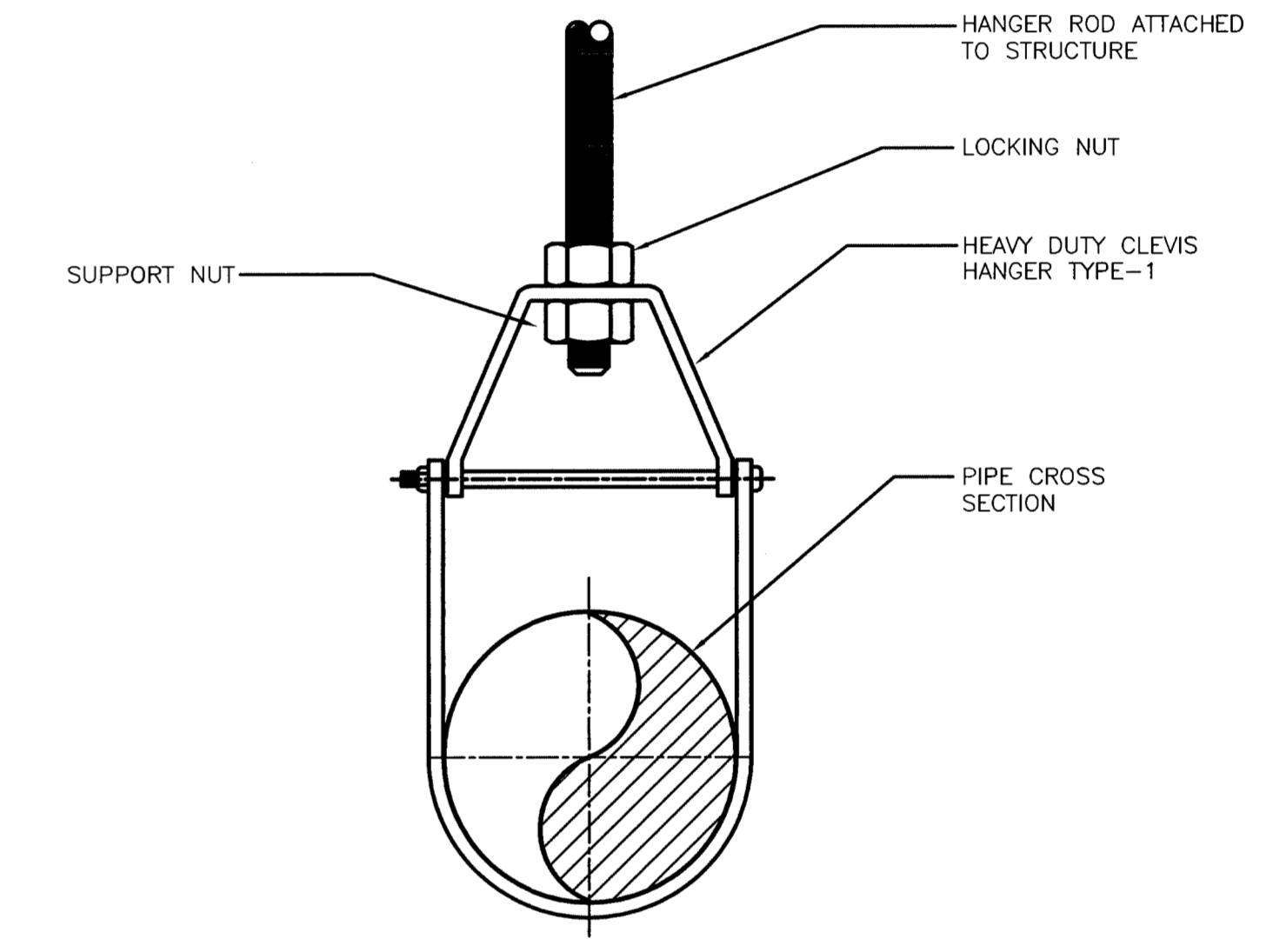
PIPING HANGER-TYPICAL DETAIL
NOT TO SCALE

NOTE:
APPLIES TO INSULATED PIPING
UP TO 2" (50)

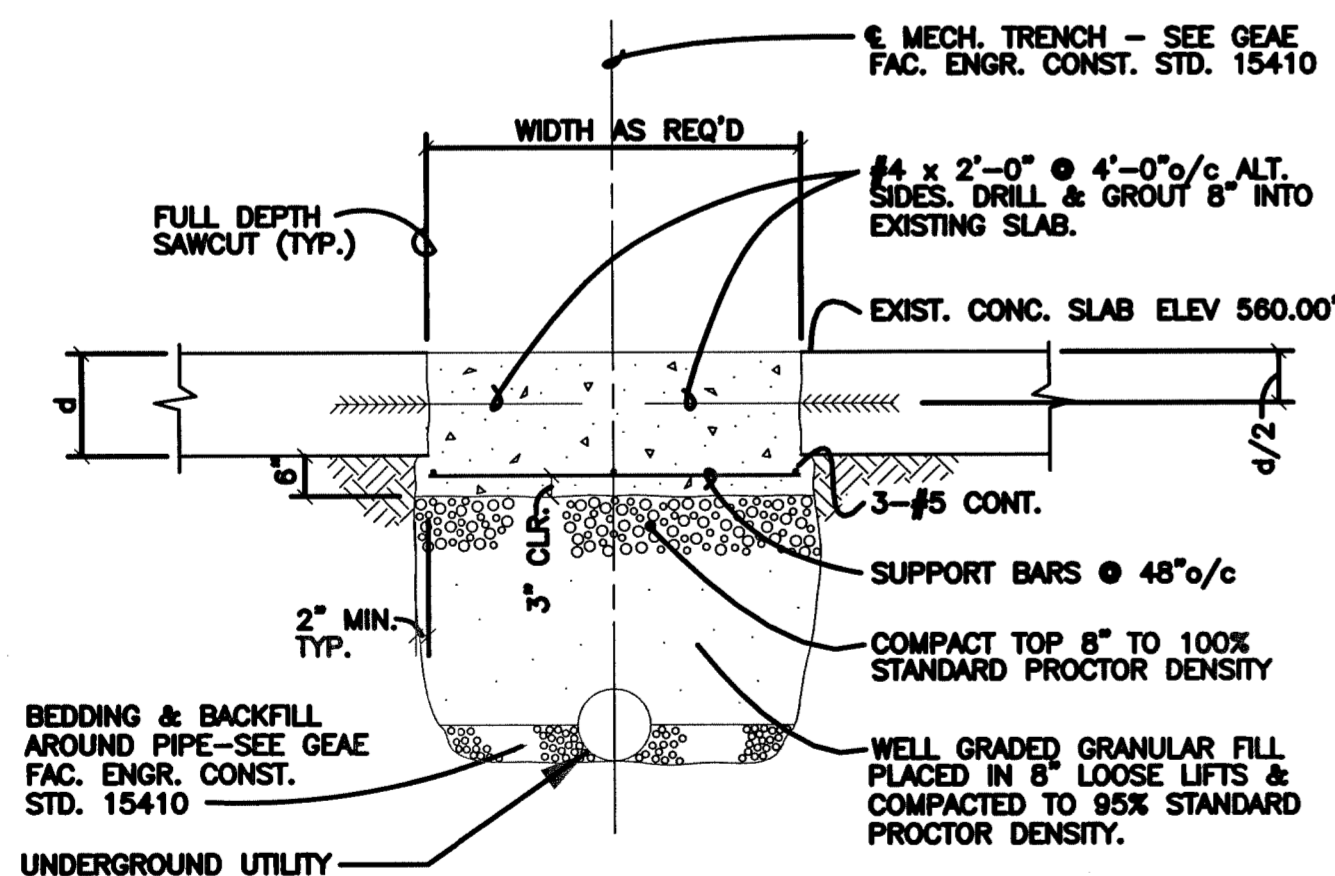


PIPING HANGER-TYPICAL DETAIL
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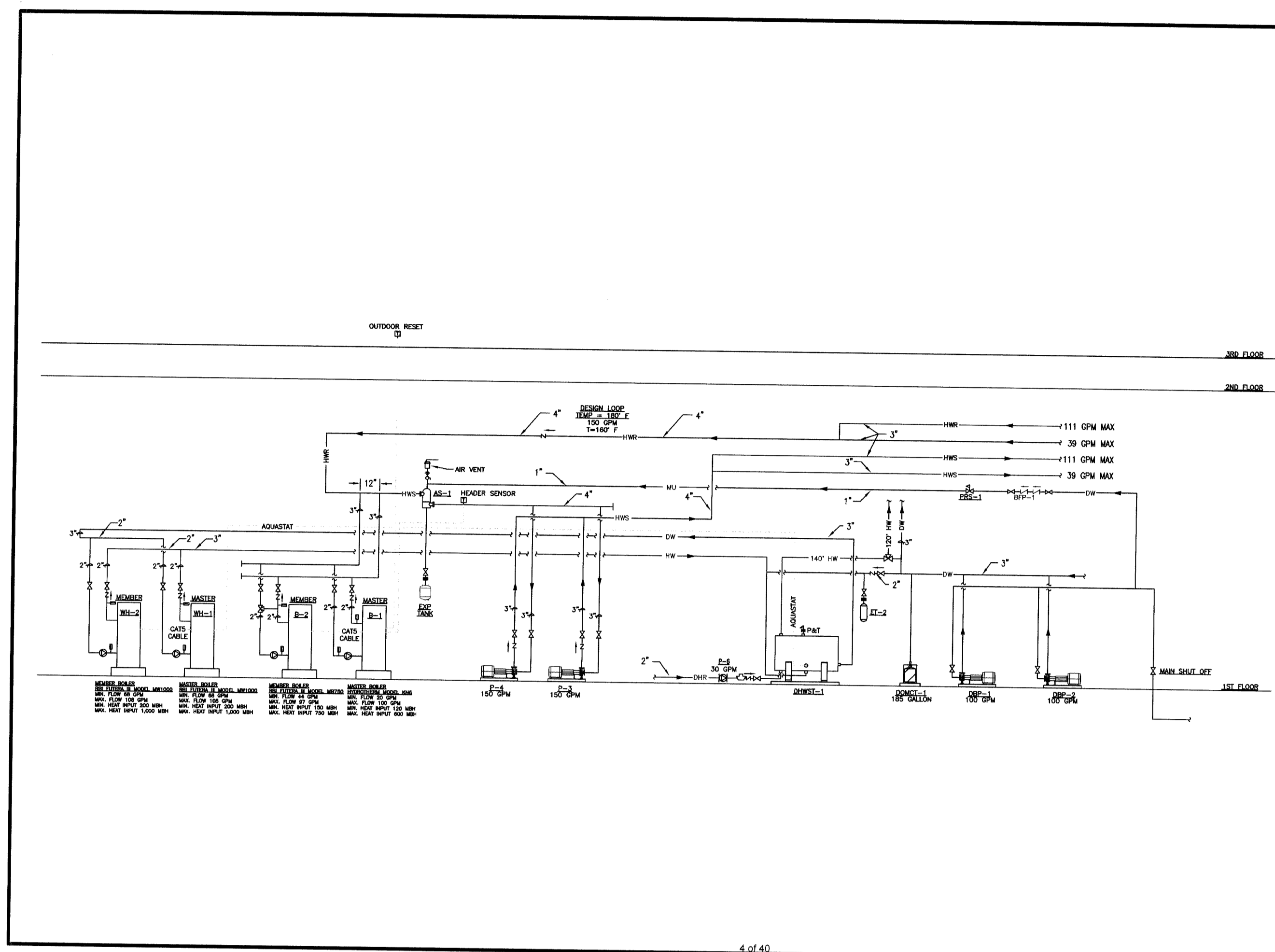
NOTE:
APPLIES TO UNINSULATED PIPING
ALL SIZES



PIPING HANGER-TYPICAL DETAIL
NOT TO SCALE



MECHANICAL TRENCH



GOES HEATING SYSTEMS
 485 West 38th Street
 Houston, TX 77018
 Goesh Heating Systems.com
 Tel: 713.699.5344
 Fax: 713.699.0915

DO NOT USE FOR CONSTRUCTION. CONCEPTUAL DRAWING ONLY.

NOTES:
 NOT TO SCALE

LEGEND:

- ▲ DIRECTION OF FLOW
- ▽ TRIP/SHUT VALVE
- CHECK VALVE
- WATER VALVE
- ⊕ PUMP
- ⊖ 3-WAY VALVE
- ⊖ THERMOMETER
- ⊖ TEMPERATURE SENSOR
- ⊖ WELL
- ⊖ SERVICE VALVE
- ⊖ PRESSURE RELIEF VALVE
- ⊖ BRONZ CONNECTION
- ⊖ AIR VENT
- ⊖ PUMP/BOILER CIRCULATION PUMP
- ⊖ HOSE BIB

JOB NAME:
BLINN COLLEGE

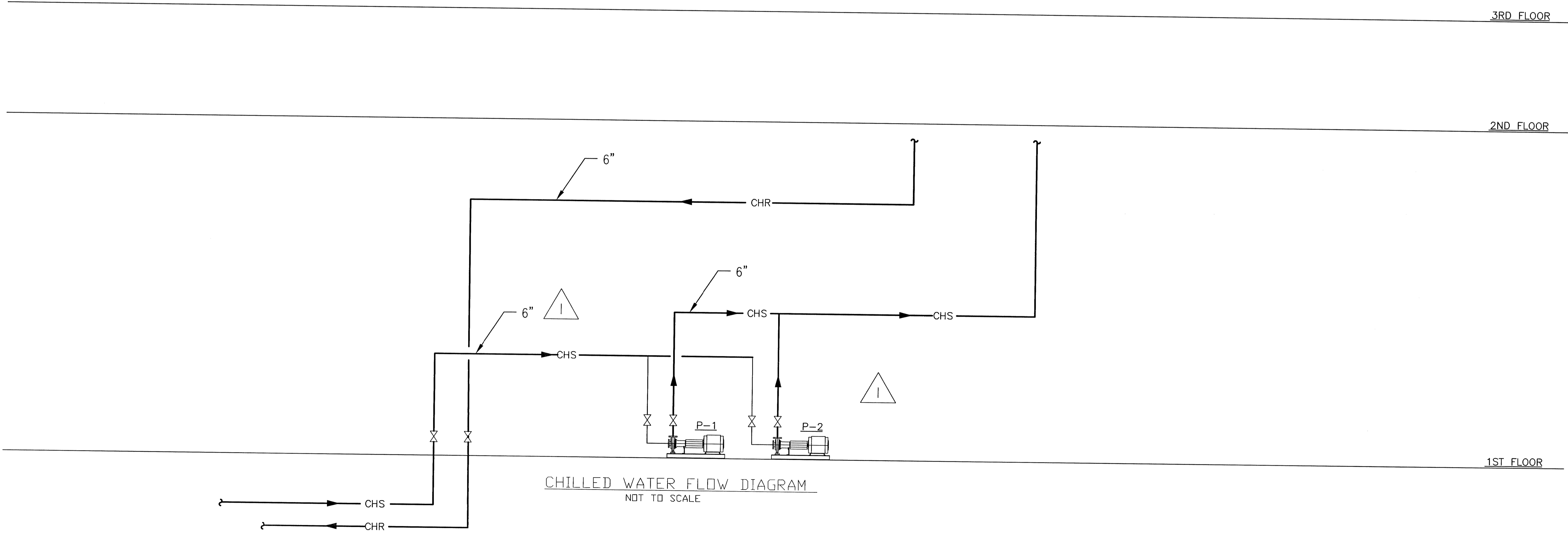
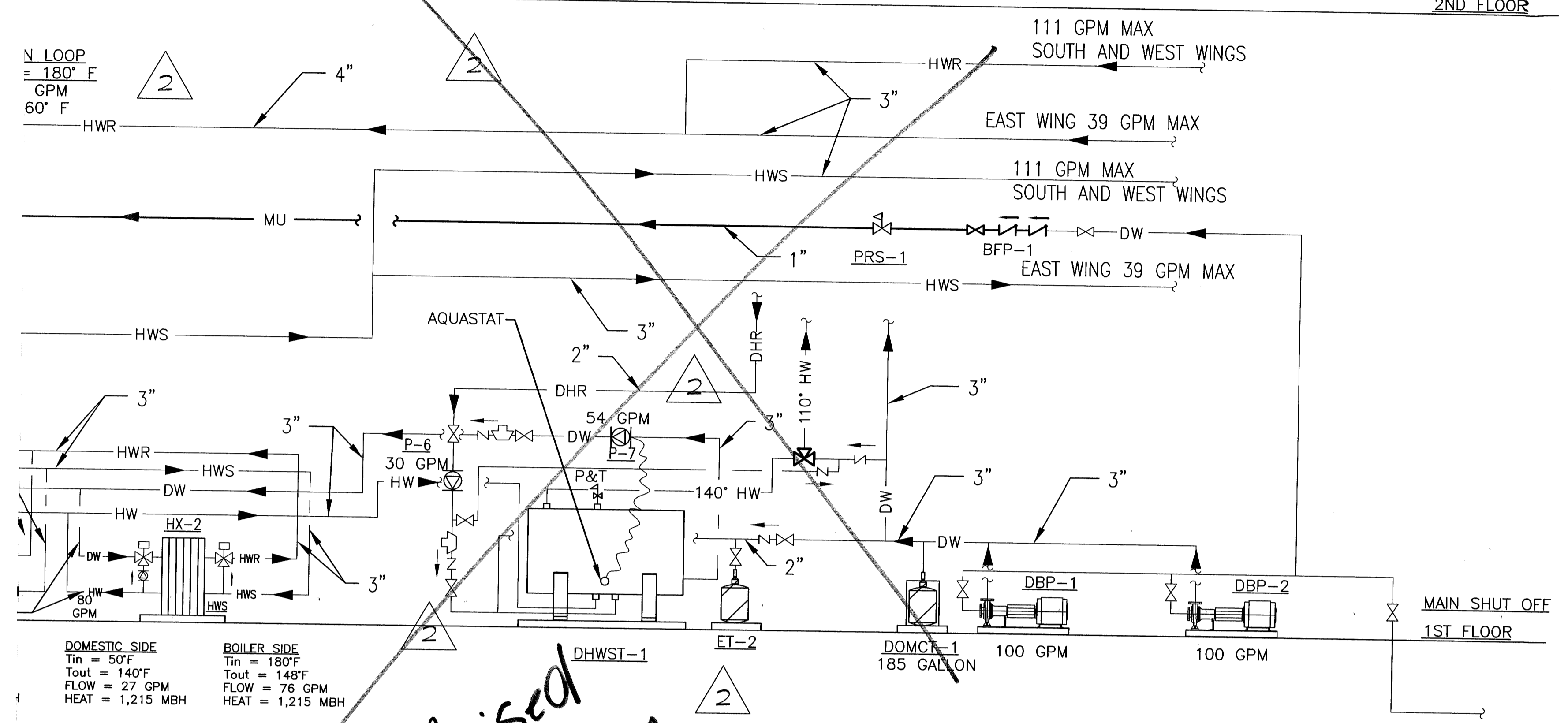
SUBMITTED TO:
EARLE CONTRACTING

DATE DRAWN:

REVISED:
12/2/2011

PAGE - TITLE:
HOT WATER FLOW DIAGRAM

DRAWN BY:
G.S. WINK



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Record Drawings

New Student Housing Project
 Blinn College
 Brenham, Texas

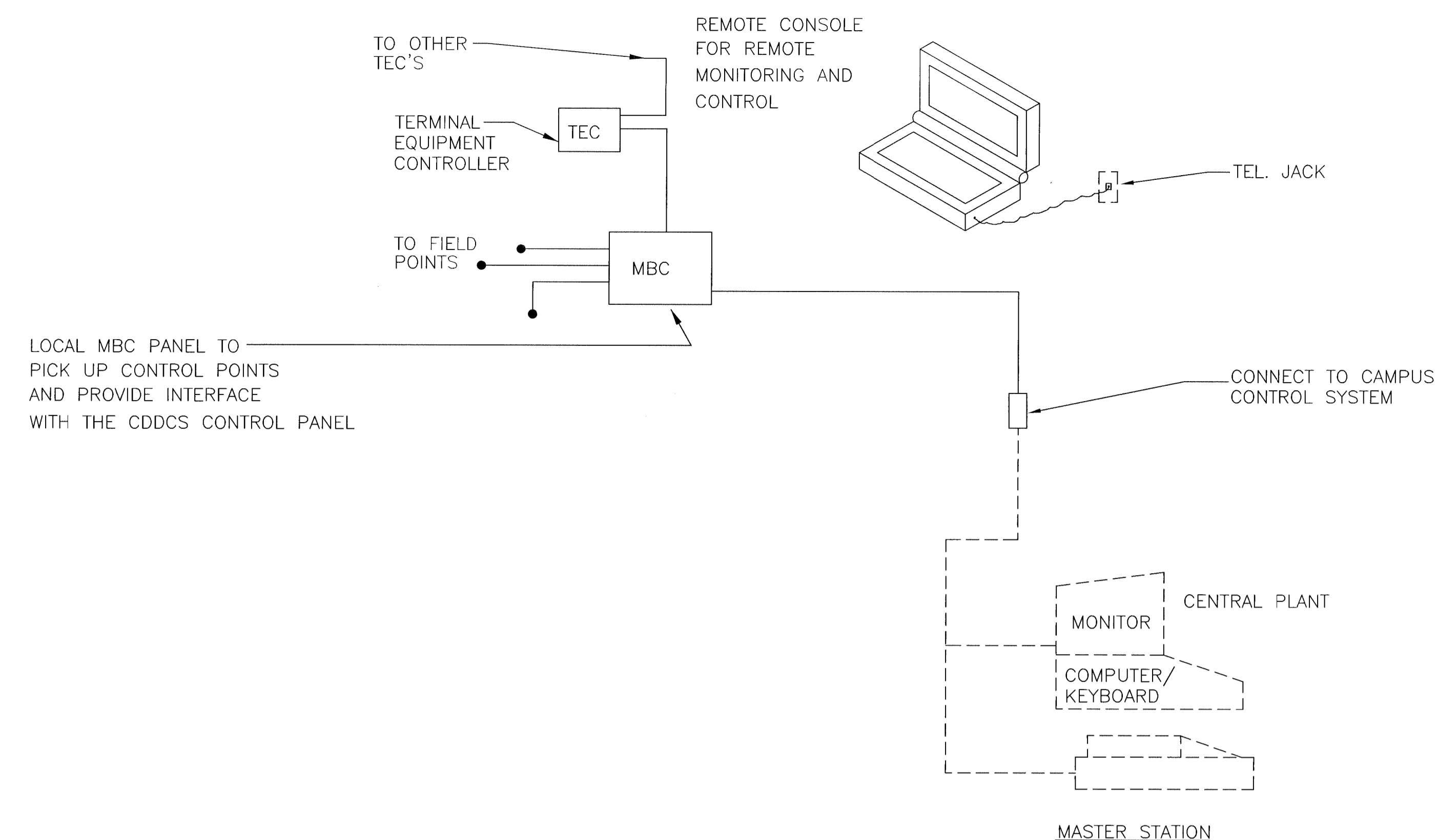
RECORD DRAWINGS
 8 / 27 / 11
ISSUED FOR CONSTRUCTION
 8 / 10 / 10

ASJ # 3
 10/19/10
 RFL 28
 11/22/10

PROJECT RECORDS

Mechanical Flow Diagram
 Scale: N.T.S.

M9.1

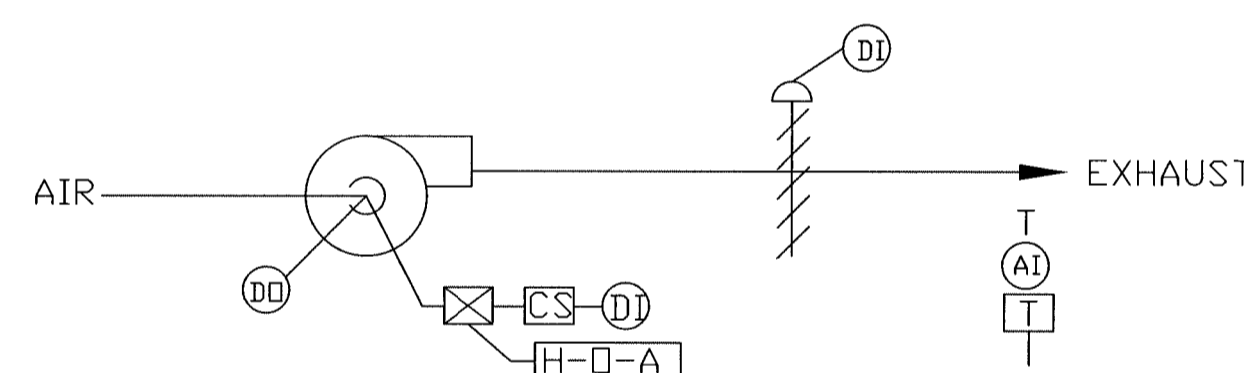


ABOVE BLOCK DIAGRAM IS A FUNCTIONAL REPRESENTATION OF THE SYSTEM ARCHITECTURE AND IS NOT A LITERAL REPRESENTATION OF HARDWARE CONFIGURATION

NOTES:

- HOURS OF OPERATION SHALL BE INPUT OR CHANGED FROM THE COMPUTER KEYBOARD INTO CDDCS SYSTEM MANUALLY FOR ALL OF THE UNITS CONTROLLED BY THE CDDCS.
- CDDCS SHALL MAKE ALL NECESSARY DECISIONS AS TO OPERATION OF AHU'S, FANS, HOURS OF OPERATION AND ALL MISCELLANEOUS COMPONENTS OF THE SYSTEM.
- ALL COMMUNICATIONS BETWEEN MBC PANELS MODEM INFO, TRANSFER DEVICE AND OPERATORS CONSOLES SHALL BE VIA A DIGITAL INFORMATION TRANSFER SYSTEM THRU THE CONTROL NETWORK.

CDDCS NETWORK FUNCTIONAL DIAGRAM
NOT TO SCALE

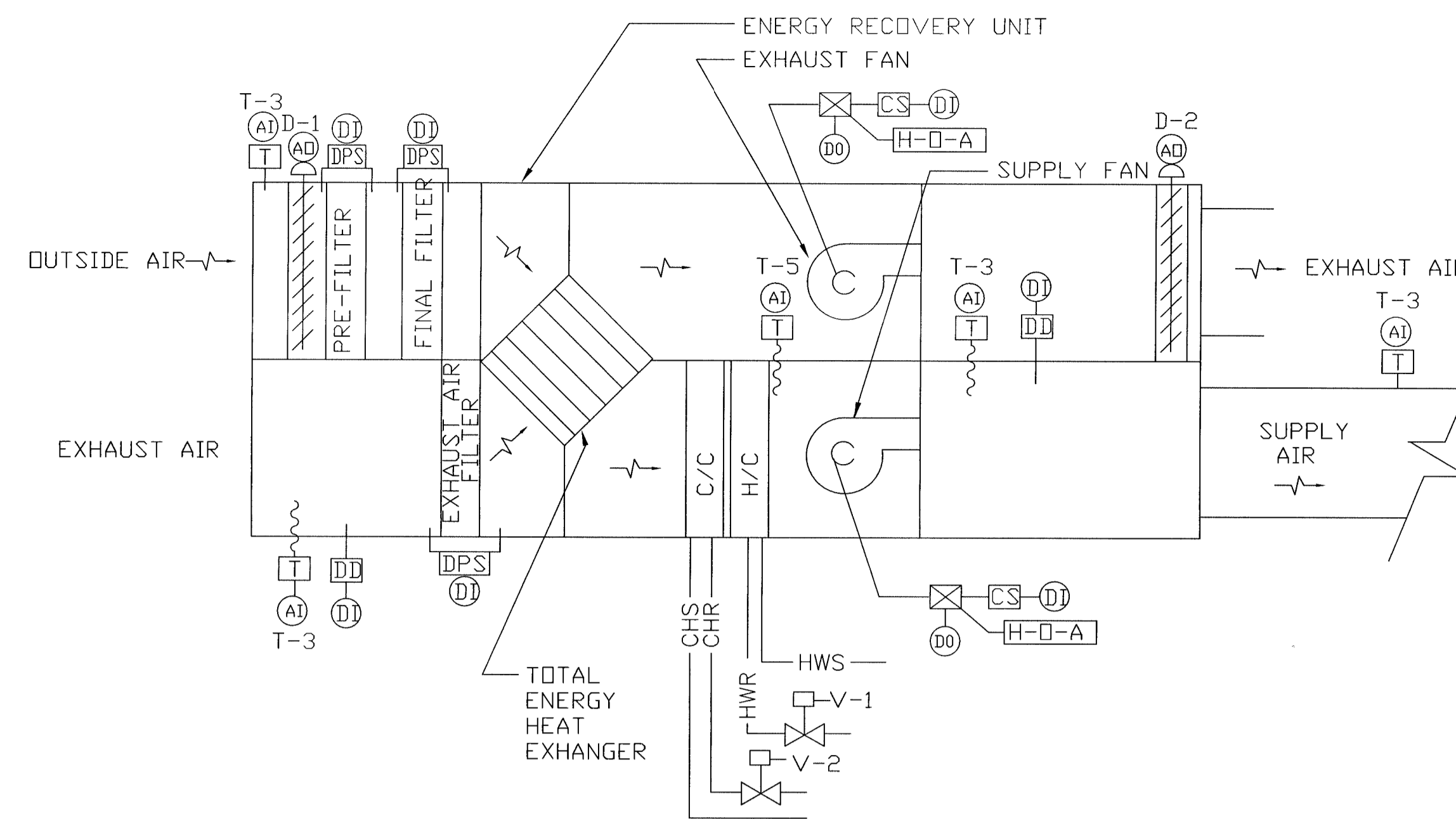


SEQUENCE OF OPERATION:

NOTE: ALL DAMPER OPERATORS SHALL BE ELECTRONIC.

- THE EXHAUST FANS SHALL BE CONTROLLED BY THE CDDCS SIGNAL TO ENABLE/DISABLE FAN STARTER CIRCUITS.
- EXHAUST FANS SHALL BE CONTROLLED BY THE SPACE THERMOSTAT. WITH SPACE TEMPERATURE OF 90°F OR HIGHER, (ADJUSTABLE) FAN DISCHARGE DAMPER SHALL OPEN FULLY, AND THEN FAN SHALL START.
- THIS CONTROL DIAGRAM SHALL APPLY TO FANS EF-1, EF-2, EF-3, EF-4, EF-5, EF-6, EF-7, AND EF-8.

ATTIC EXHAUST FAN CONTROL DIAGRAM
NOT TO SCALE



ENERGY RECOVERY UNIT CONTROL DIAGRAM
NOT TO SCALE

SEQUENCE OF OPERATION

- THE HOURS OF OPERATION FOR THE RECOVERY UNIT SHALL BE ADJUSTABLE THRU THE CDDCS SYSTEM. VIA PROGRAMMING SENSING ANY ZONE IN OCCUPIED MODE.
- THE ENERGY RECOVERY UNIT IS A CONSTANT VOLUME, CONSTANT DISCHARGE TEMPERATURE AIR HANDLER.
- START UP:
 - WITH ERU FAN START UP SIGNAL, DAMPERS D-1 AND D-2 SHALL OPEN FULLY. THE EXHAUST FAN SHALL START AND AFTER A FIVE SECOND DELAY, THE SUPPLY FAN SHALL START.
- FILTER BANK:
 - THE PRESSURE DIFFERENTIAL SWITCH ACROSS THE FILTER SHALL BRING ON ALARM WHEN THE SET POINTS ARE EXCEEDED. THE SET POINTS SHALL BE ADJUSTABLE FROM THE SENSOR ONLY.
- HEATING MODE:
 - THE HEATING MODE SHALL BE AUTOMATICALLY SELECTED WHEN THE OUTSIDE AIR TEMPERATURE IS 60° OR BELOW. COOLING WILL BE DISABLED.
 - WHEN THE UNIT IS IN TWO HOT WATER VALVE, V-1 SHALL MODULATE TO MAINTAIN A DISCHARGE AIR SETPOINT OF 70°F (ADJUSTABLE)
- COOLING MODE:
 - THE COOLING MODE SHALL BE SET BY THE CDDCS. WHEN THE OUTDOOR TEMPERATURE IS 70°F OR ABOVE, THE UNIT SHALL BE IN COOLING MODE (ADJUSTABLE). HEAT WILL BE DISABLED.
 - WITH THE ERU IN COOLING MODE THE CHILLED WATER SUPPLY VALVE, V-2 SHALL FULLY OPEN TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 55°F (ADJUSTABLE).
- SMOKE DETECTION:
 - DUCT DETECTOR SHALL BE INTEGRAL TO FIRE ALARM SYSTEM AND PROVIDED WITH RELAY TYPE BASE TO PROVIDE INPUT SIGNAL TO AND A STOP FAN MOTORS AND CLOSE DAMPERS VIA CDDCS.
- THE CDDCS SHALL MONITOR THE FOLLOWING POINTS AND AN AUDIBLE ALARM WITH PRINT OUT SHALL TAKE PLACE AT THE CENTRAL CONTROL IF ANY OF THESE SET POINTS ARE EXCEEDED (HIGH/LOW ALARM).
 - DAMPER D-1 AND D-2 POSITION.
 - FILTER PRESSURE DIFFERENTIAL.
 - OUTSIDE AIR TEMPERATURE (T-1).
 - EXHAUST AIR TEMPERATURE (T-2).
 - HEATING COIL ENTERING AND LEAVING AIR TEMPERATURE (T-3 AND T-4).
 - COOLING COIL ENTERING AND LEAVING TEMPERATURE (T-5 AND T-4).
 - SUPPLY AND EXHAUST FAN STATUS.
 - MOTOR CURRENT OF A SINGLE LEG.
 - STATIC PRESSURE AT FAN DISCHARGE.
- THE CDDCS SHALL CONTROL THE FOLLOWING POINTS:
 - SA TEMPERATURE RA TEMPERATURE OA TEMPERATURE.
 - FANS ON/OFF.
 - DAMPER POSITIONS.
 - HOT WATER VALVE.
 - CHILLED WATER VALVE.
 - ALL POINTS LISTED AS BEING MONITORED.
 - CHANGE ALL ALARM POINTS.
 - CHANGE ALL SET POINTS.

NOTES

- FOR CONTROLS SYMBOLS, ABBREVIATIONS AND GENERAL NOTES SEE THIS DWG.
- FOR SYMBOLS, ABBREVIATIONS AND MECHANICAL GENERAL NOTES, SEE DWG. M-0.
- THE TERM 'POINT' REFERS TO A SIGNAL CONDITION GENERATED EITHER BY A SENSOR OR BY MBC, EITHER ANALOG OR DIGITAL.
- AUTOMATIC DAMPER MOTORS SHALL BE PROVIDED BY CONTROL CONTRACTOR.
- ALL DUCT DETECTORS SHALL BE PROVIDED INSTALLED AND POWER WIRED BY ELECTRICAL CONTRACTOR.
- FOR CONNECTION OF COMBINATION OF DUCT DETECTORS, SEE ELECTRICAL DRAWINGS.
- ALL H-O-A SWITCHES WILL BE WIRED WITH THE CDDCS ON THE AUTOMATIC POSITION.

CONTROLS SYMBOLS AND ABBREVIATIONS

A	-	AUTOMATIC
CDDCS	-	COMPUTERIZED DIRECT DIGITAL CONTROL SYSTEM
CS	-	CURRENT SWITCH
D	-	DAMPER
DD	-	DUCT SMOKE DETECTOR
DDC	-	DIRECT DIGITAL CONTROL
ERU	-	ENERGY RECOVERY UNIT
F	-	FAN
FS	-	FLOW SWITCH
H	-	HAND
NC	-	NORMALLY CLOSED
NO	-	NORMALLY OPEN
O	-	OFF
OA	-	OUTSIDE AIR
P	-	PUMP
RA	-	RETURN AIR
SA	-	SUPPLY AIR
MBC	-	MODULAR BUILDING CONTROLLER
TEC	-	TERMINAL EQUIPMENT CONTROLLER
TEL	-	TELEPHONE
VFD	-	VARIABLE/ADJUSTABLE FREQUENCY DRIVE
#	-	PSI GAUGE PRESSURE
M	-	ELECTRIC MOTOR
AI	-	ANALOG INPUT
DI	-	DIGITAL INPUT
AO	-	ANALOG OUTPUT
DO	-	DIGITAL OUTPUT
TEC	-	TERMINAL EQUIPMENT CONTROLLER
DPS	-	DIFFERENTIAL PRESSURE SWITCH
P	-	PRESSURE SENSOR
T	-	TEMPERATURE SENSOR-DIRECT
T	-	TEMPERATURE SENSOR-AVERAGING
DD	-	DUCT SMOKE DETECTOR
P	-	PRESSURE SIGNAL
FS	-	FLOW SENSOR
M	-	DIGITAL FLOW METER
SP	-	STATIC PRESSURE SENSOR
⊗	-	MOTOR STARTER OR CONTROLLER
⊗	-	TWO WAY CONTROL VALVE
⊗	-	THREE WAY CONTROL VALVE
⊗	-	AUTOMATIC PARALLEL BLADE DAMPER
⊗	-	AUTOMATIC OPPOSED BLADE DAMPER
⊗	-	INLINE PUMP
⊗	-	FAN OR PUMP
⊗	-	CONTACT (NORMALLY CLOSED)
⊗	-	CONTACT (NORMALLY OPEN)
⊗	-	SWITCH (OPEN)
H-O-A	-	HANDS-OFF-AUTOMATIC
⊗	-	H-O-A SWITCH
⊗	-	FUSE
VFD	-	VARIABLE FREQUENCY DRIVE

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Record Drawings

New Student Housing Project
 Blinn College
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RECORD DRAWINGS
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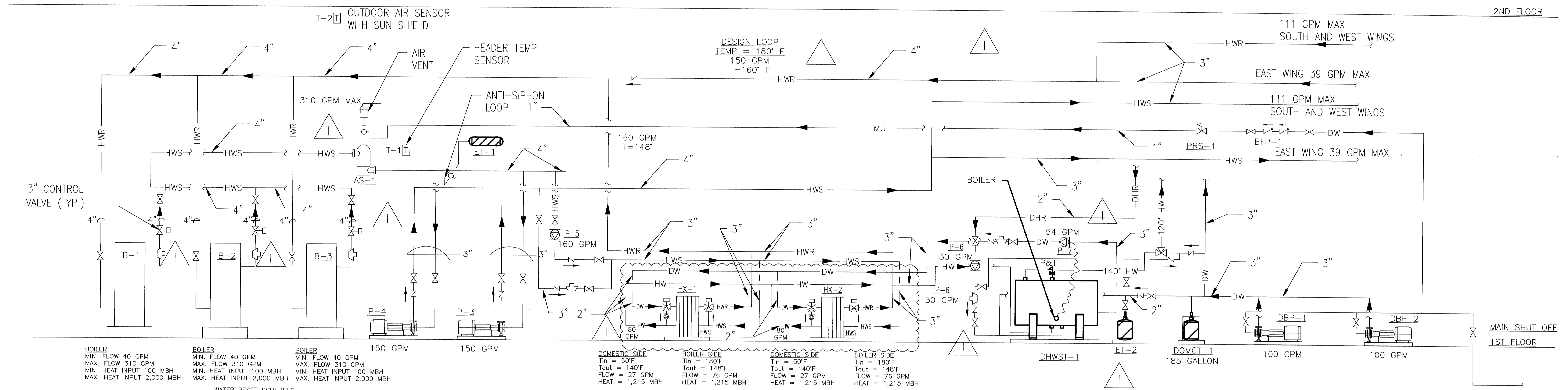
PROJECT RECORDS

Mechanical Controls
Scale: N.T.S.

M10.1

3RD FLOOR

2ND FLOOR



BOILER	MIN. FLOW 40 GPM	MAX. FLOW 310 GPM	MIN. HEAT INPUT 100 MBH	MAX. HEAT INPUT 2,000 MBH
B-1	40 GPM	310 GPM	100 MBH	2,000 MBH
B-2	40 GPM	310 GPM	100 MBH	2,000 MBH
B-3	40 GPM	310 GPM	100 MBH	2,000 MBH

QA TEMP	BOILER SET POINT
60° F	145° F
50° F	145° F
40° F	145° F
35° F	160° F
25° F	180° F

HOT WATER SYSTEM SEQUENCE OF OPERATION

- PRE-START
- HEATING SYSTEM BOILERS (B-1, B-2, B-3) SHALL BE OFF. HOT WATER PUMPS (P-3, P-4) SHALL BE OFF.
- SYSTEM START
 - WHEN COMMANDED BY THE DDC, THE HOT WATER HEATING SYSTEM SHALL START.
 - HOT WATER PUMPS P-1 LEAD, P-2 LAG) SHALL RUN CONTINUOUSLY WHEN SELECTED BY THE DDC. THE LEAD PUMP SHALL AUTOMATICALLY BE CHANGED WEEKLY BY THE CDDCS. UPON FAILURE OF THE LEAD PUMP AS SENSED BY THE FLOW SWITCH (FS-1), THE PUMP VARIABLE FREQUENCY DRIVE SHALL ADJUST THE SPEED OF THE MOTOR TO MAINTAIN THE PRESSURE SET POINT OF 60 PSIG. UPON FAILURE OF THE LEAD PUMP, THE LAG PUMP SHALL AUTOMATICALLY START. AN ALARM SHALL BE SENT TO THE CDDCS.
 - HOT WATER BOILERS SHALL OPERATE AND MAINTAIN HOT WATER TEMPERATURE SET POINT AT 145°F (ADJUSTABLE) AS SENSED BY HEADER LOOP TEMPERATURE SENSOR T-1. THE HOT WATER TEMPERATURE SHALL BE RE-SET BASED UPON THE HOT WATER RESET SCHEDULE. BOILERS SHALL ALTERNATE AND MODULATE CAPACITY AS DETERMINED BY THEIR BOILER MANAGEMENT CONTROL PANEL.

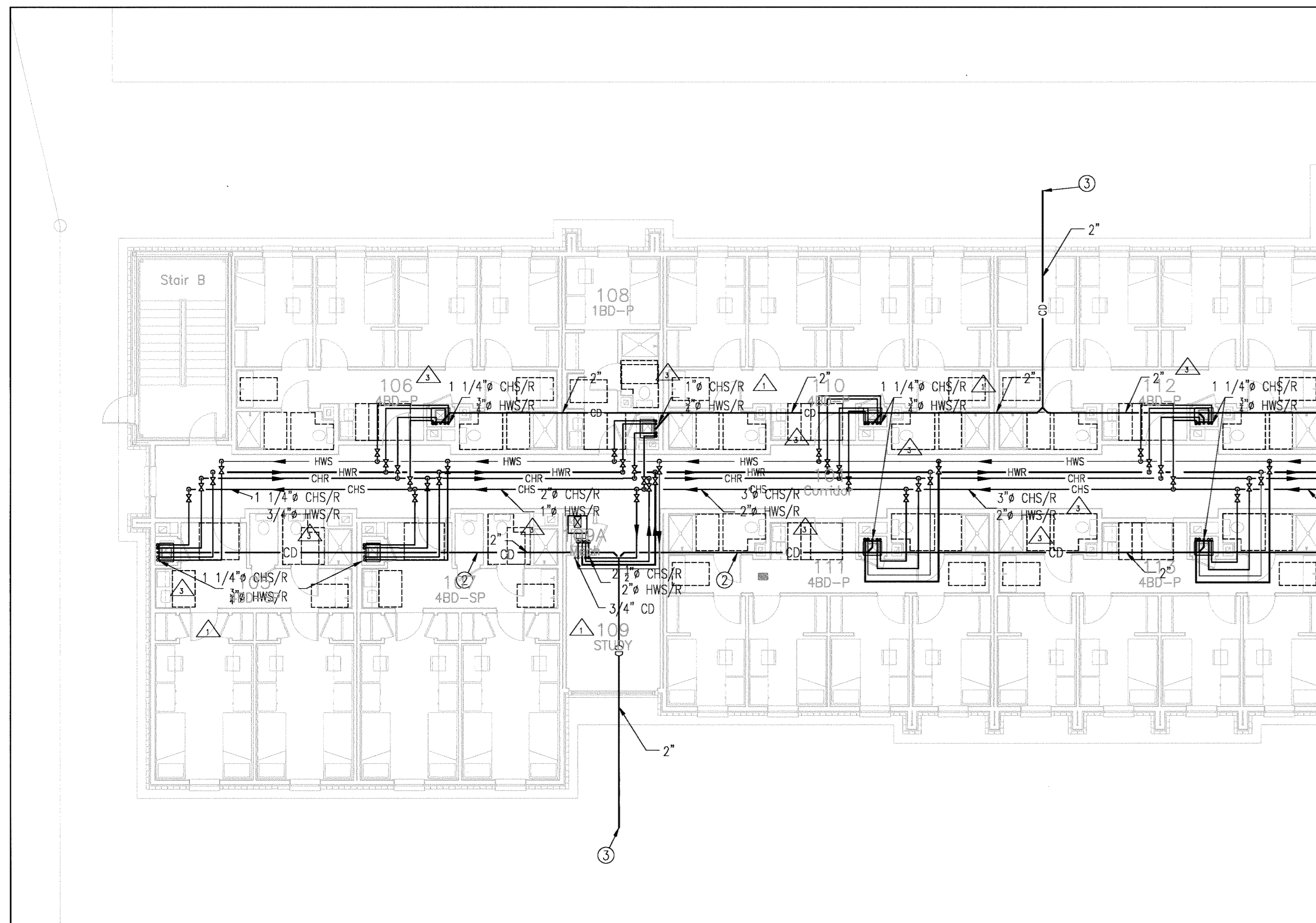
DOMESTIC HOT WATER SYSTEM SEQUENCE OF OPERATION

- PRE-START
- HEATING SYSTEM BOILERS (B-1, B-2, B-3) SHALL BE OFF. DOMESTIC WATER PUMP, P-5 SHALL BE OFF.
- SYSTEM START
 - WHEN COMMANDED BY THE CDDCS, THE HOT WATER HEATING SYSTEM SHALL START.
 - THE DOMESTIC HOT WATER TANK PUMP P-7 SHALL START WHEN COMMANDED BY THE CDDCS. THE PUMP SHALL MODULATE ON AND OFF AS DETERMINED BY THE AQUASTAT IN THE DOMESTIC HOT WATER TANK. TANK SET POINT SHALL BE 140° F..
 - THE DOMESTIC HOT WATER ZONE PUMP P-5 SHALL START WHEN COMMANDED BY THE CDDCS AND SHALL RUN CONTINUOUSLY.
 - HOT WATER RECIRCULATION PUMP P-6 SHALL START WHEN COMMANDED BY THE CDDCS AND SHALL RUN CONTINUOUSLY.
 - THE HEAT EXCHANGER'S INTERNAL CONTROLLER SHALL MODULATE ITS 3 WAY VALVE TO MAINTAIN THE TEMPERATURE SET POINT OF 140°F OF THE TANK.

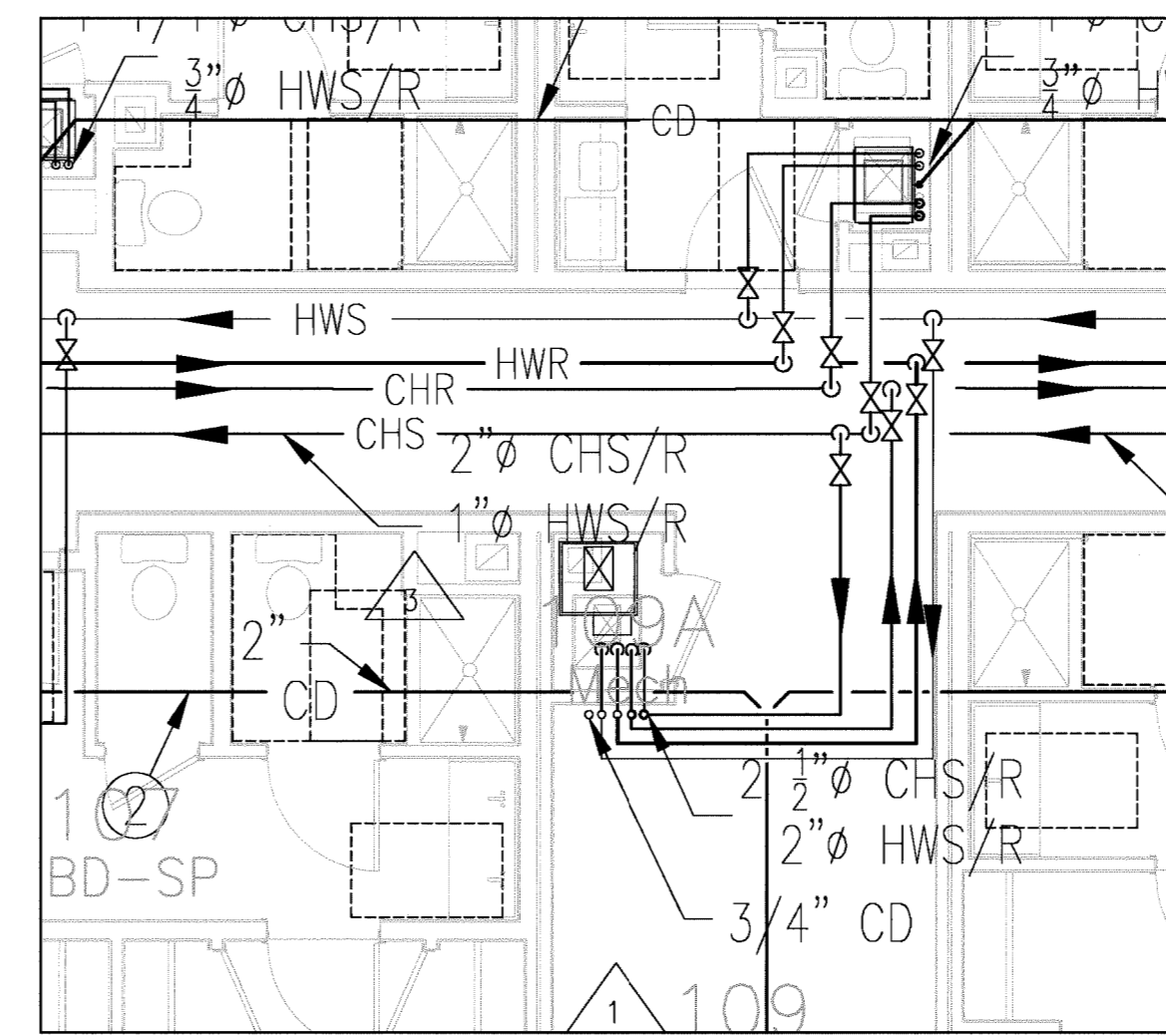
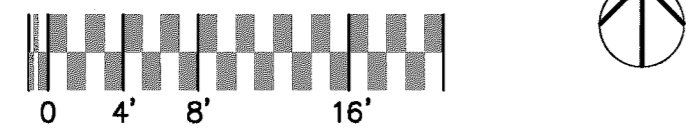
DOMESTIC WATER BOOSTER PUMP SYSTEM SEQUENCE OF OPERATION

- PRE-START
 - DOMESTIC BOOSTER PUMPS, DBP-1 AND DBP-2 SHALL BE OFF.
- SYSTEM START
 - WHEN COMMANDED BY THE DDC, BOOSTER PUMP SYSTEM SHALL START.
 - THE DOMESTIC WATER BOOSTER PUMPS SHALL BE CONTROLLED BY THEIR ON CONTROL PANEL.

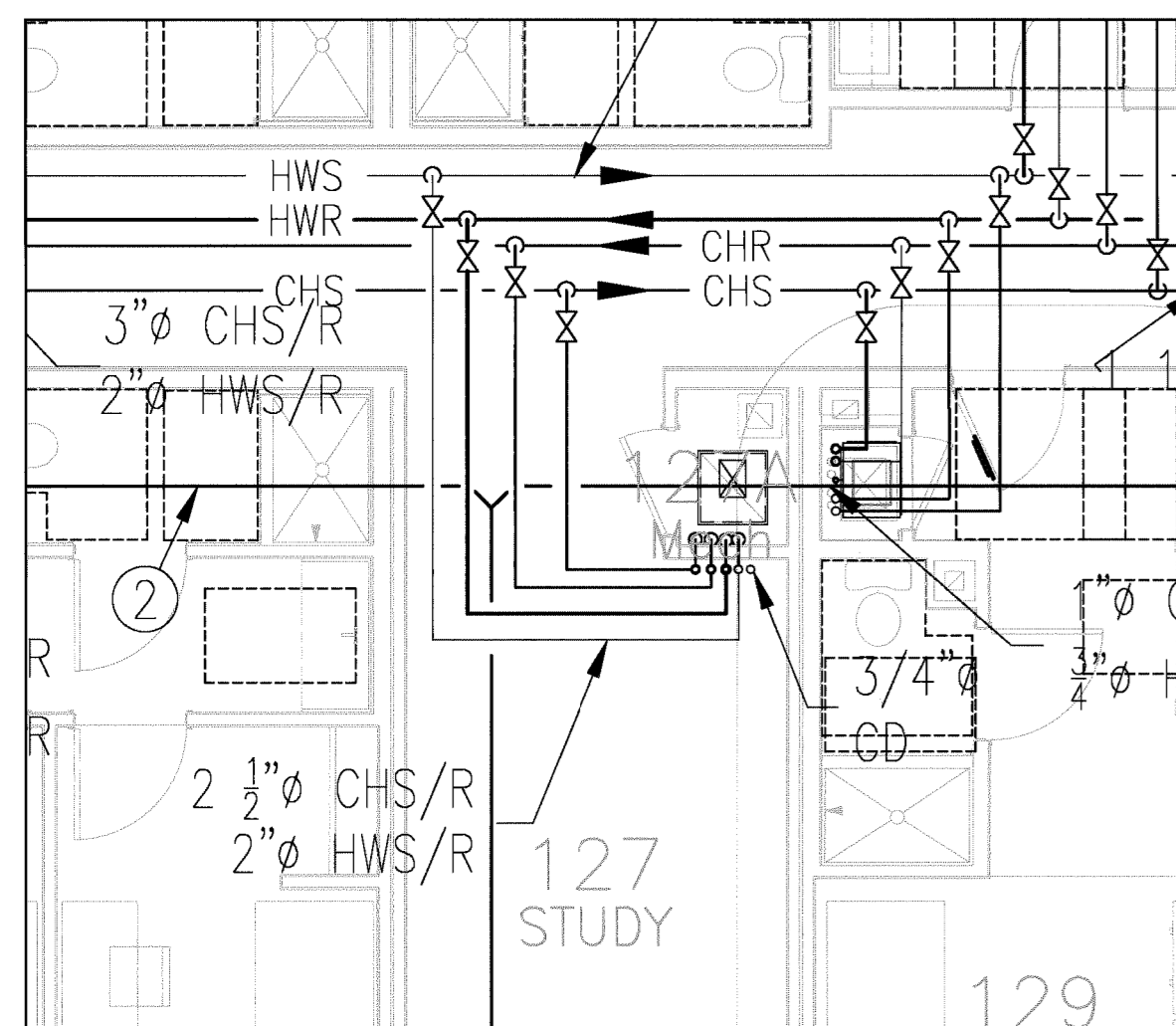
PROJECT RECORDS



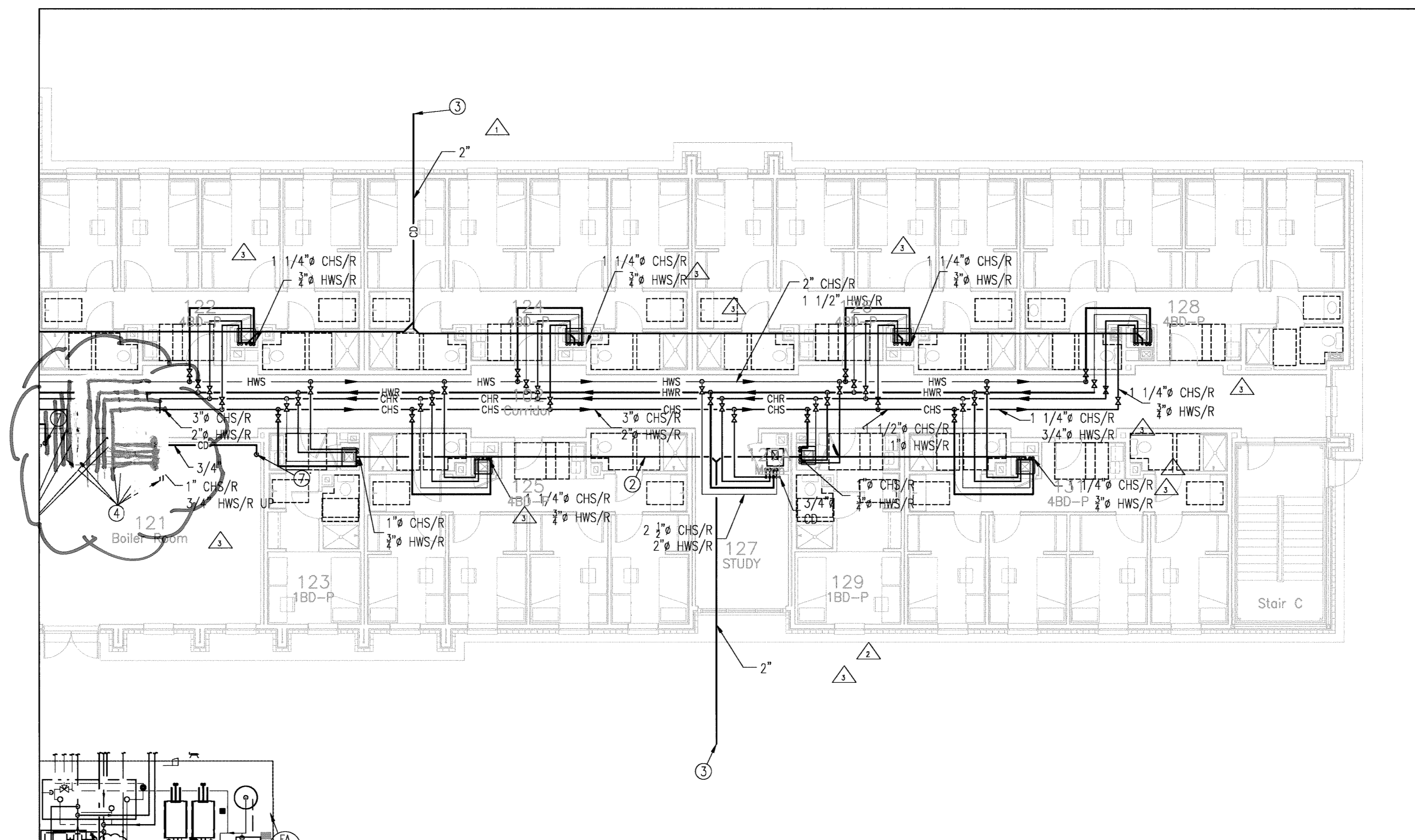
1 Mechanical Plan - West Wing
SCALE: 1/8" = 1'-0"



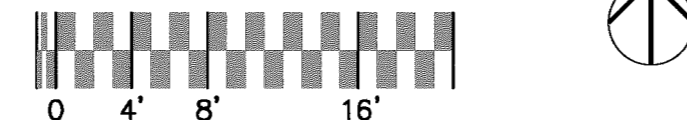
2 MECH ROOM 109A ENLARGED PLAN
SCALE: 1/4" = 1'-0"



3 MECH ROOM 127A ENLARGED PLAN
SCALE: 1/4" = 1'-0"



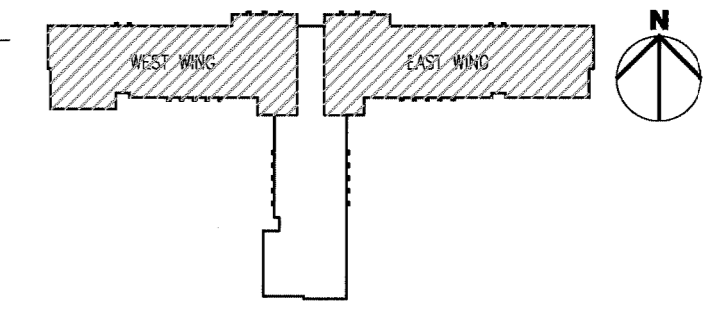
4 Mechanical Plan - East Wing
SCALE: 1/8" = 1'-0"



MECH. KEY NOTES

- ① 3/4" CONDENSATE RISER DOWN.
- ② 2" CONDENSATE DRAIN UNDERSLAB.
- ③ CONNECT TO STORM DRAIN AT BUILDING PERIMETER.
- ④ SEE DRAWING M1.0 FOR PIPING CONTINUATION.
- ⑤ CONNECT TO SANITARY DRAIN.
- ⑥ TRAP WITH TRAP PRIMER CONNECTION.
- ⑦ ROUTE CONDENSATE TO FLOOR DRAIN

KEY MAP



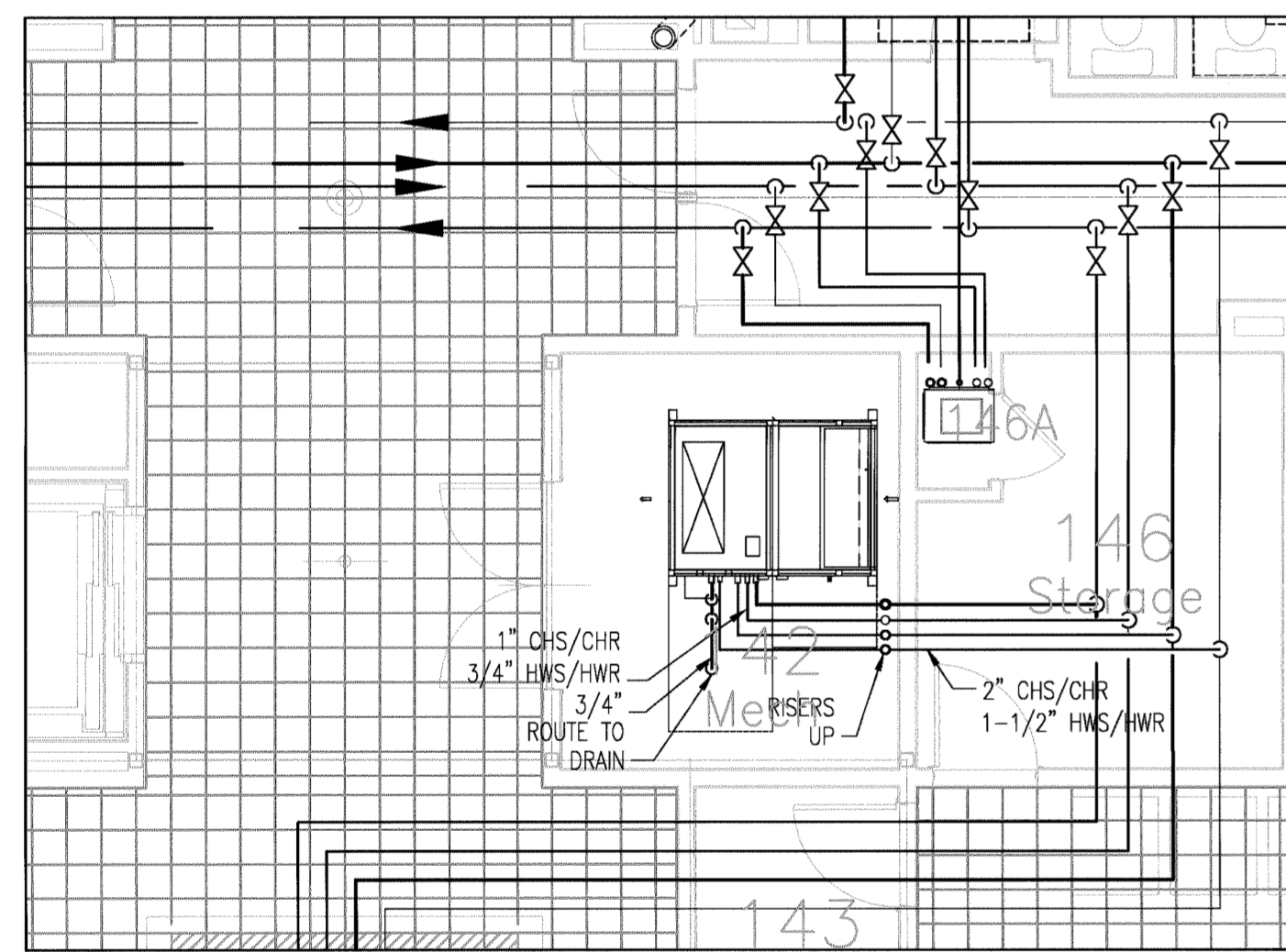
MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ⊞ TURNING VANES
- ⊞ DUCT TRANSITION
- ⊞ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊞ VOLUME DAMPER
- ⊞ FIRE DAMPER
- ⊞ SMOKE/FIRE DAMPER
- ⊞ INDICATES DETAIL/ LOCATION NUMBER
- ⊞ INDICATES DRAWING TO REFERENCE

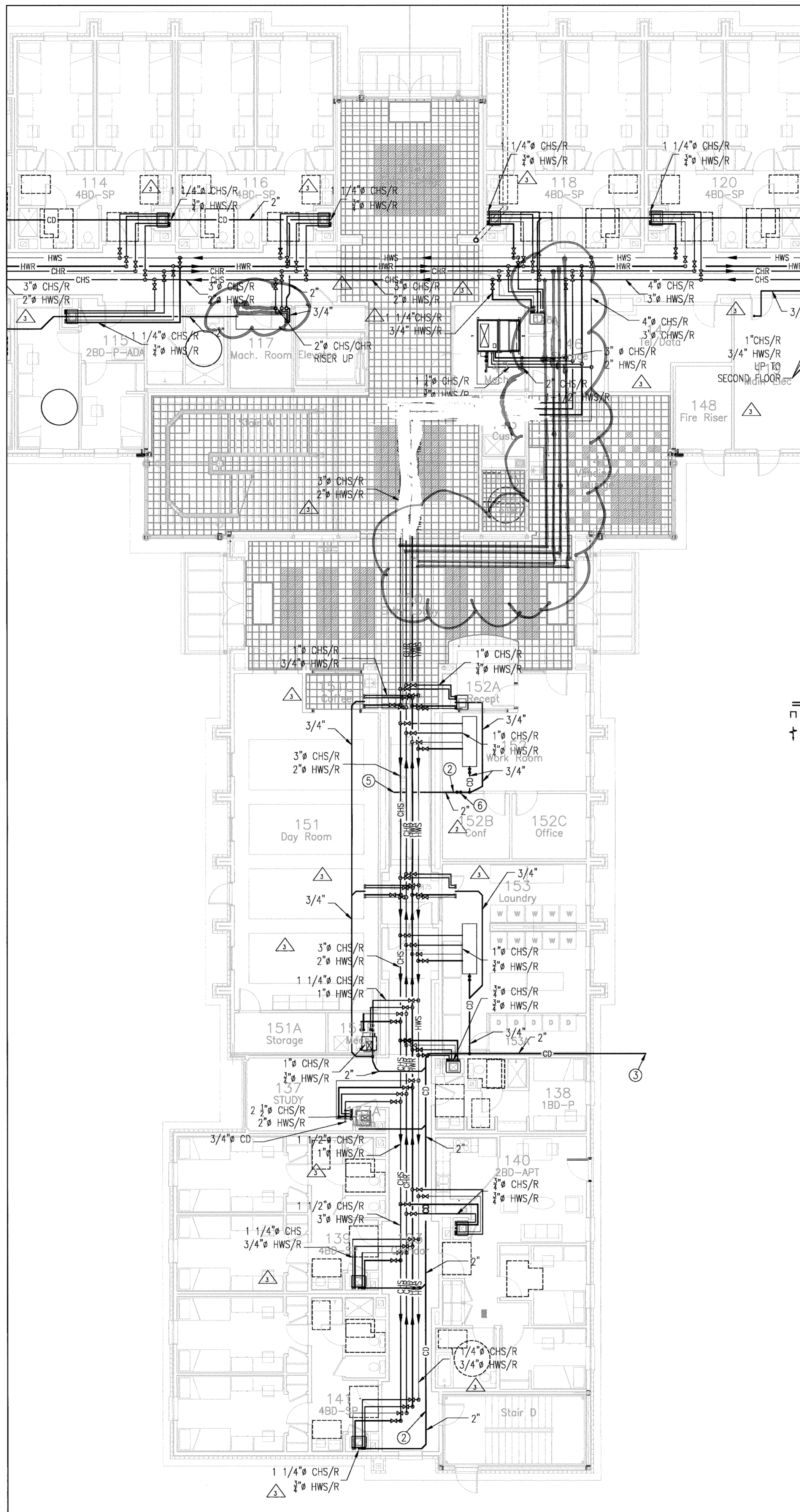
PROJECT RECORDS

EAGLE Contracting
AS BUILT DRAWINGS
 NTS

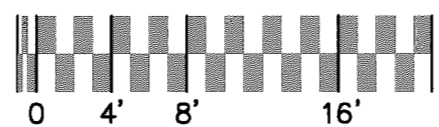
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 1/22/10
 RFI #15
 11/22/10
 RFI #28
 1/22/10



5 MECHANICAL ROOM 142 ENLARGED PLAN
SCALE: 1/4" = 1'-0"



6 Mechanical Plan - South Wing and Lobby
SCALE: 1/8" = 1'-0"



Mechanical Piping First Floor Plan - South Wing and Lobby
Scale: As Indicated

MECH. KEY NOTES

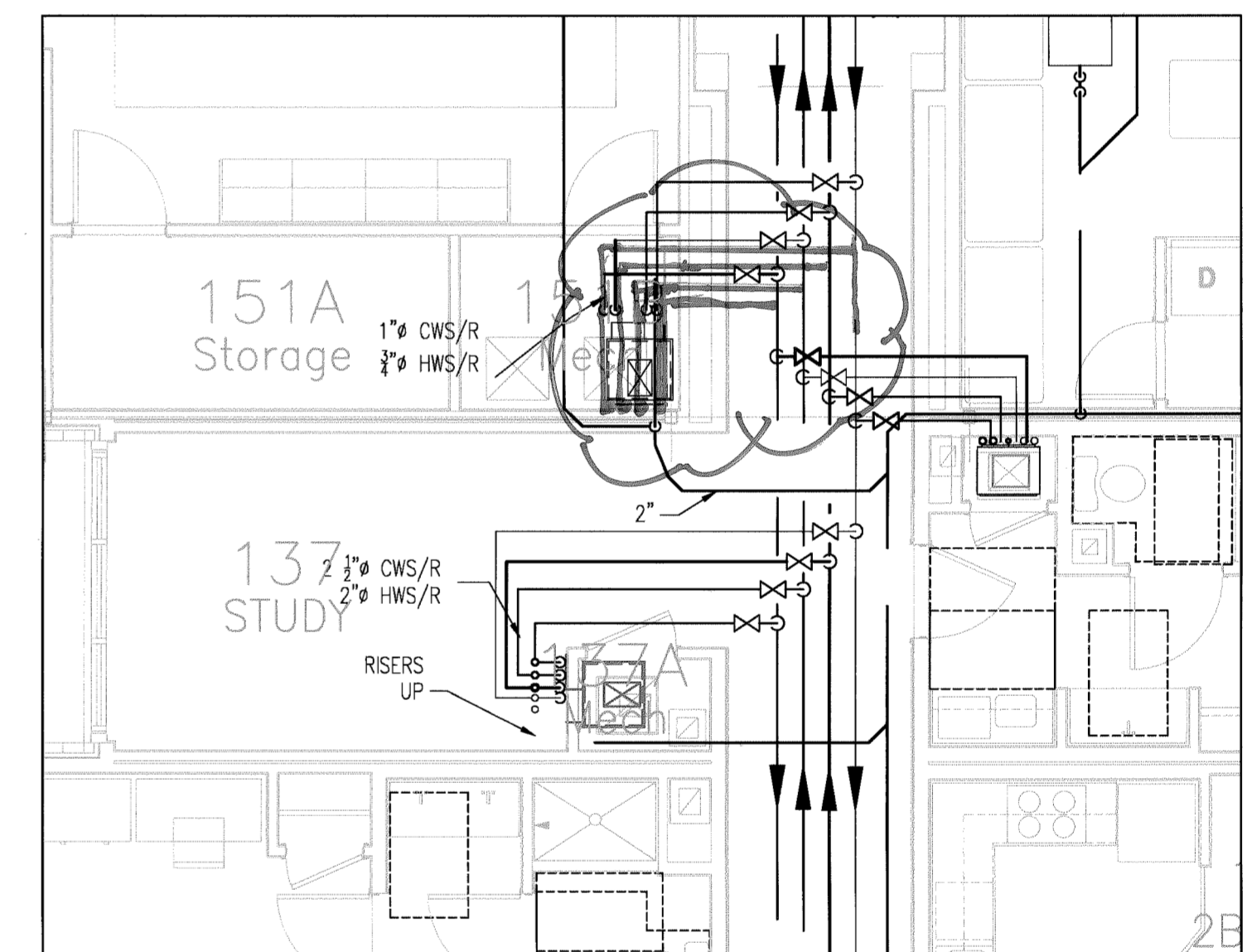
- 3/4" CONDENSATE RISER DOWN.
- 2" CONDENSATE DRAIN UNDERSLAB.
- CONNECT TO STORM DRAIN AT BUILDING PERIMETER.
- SEE DRAWING M1.0 FOR PIPING CONTINUATION.
- CONNECT TO SANITARY DRAIN.
- TRAP WITH TRAP PRIMER CONNECTION.
- ROUTE CONDENSATE TO FLOOR DRAIN.

KEY MAP

MECHANICAL LEGEND

- TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- TURNING VANES
- DUCT TRANSITION
- RETURN DUCT W/SMOKE/FIRE DAMPER
- VOLUME DAMPER
- FIRE DAMPER
- SMOKE/FIRE DAMPER

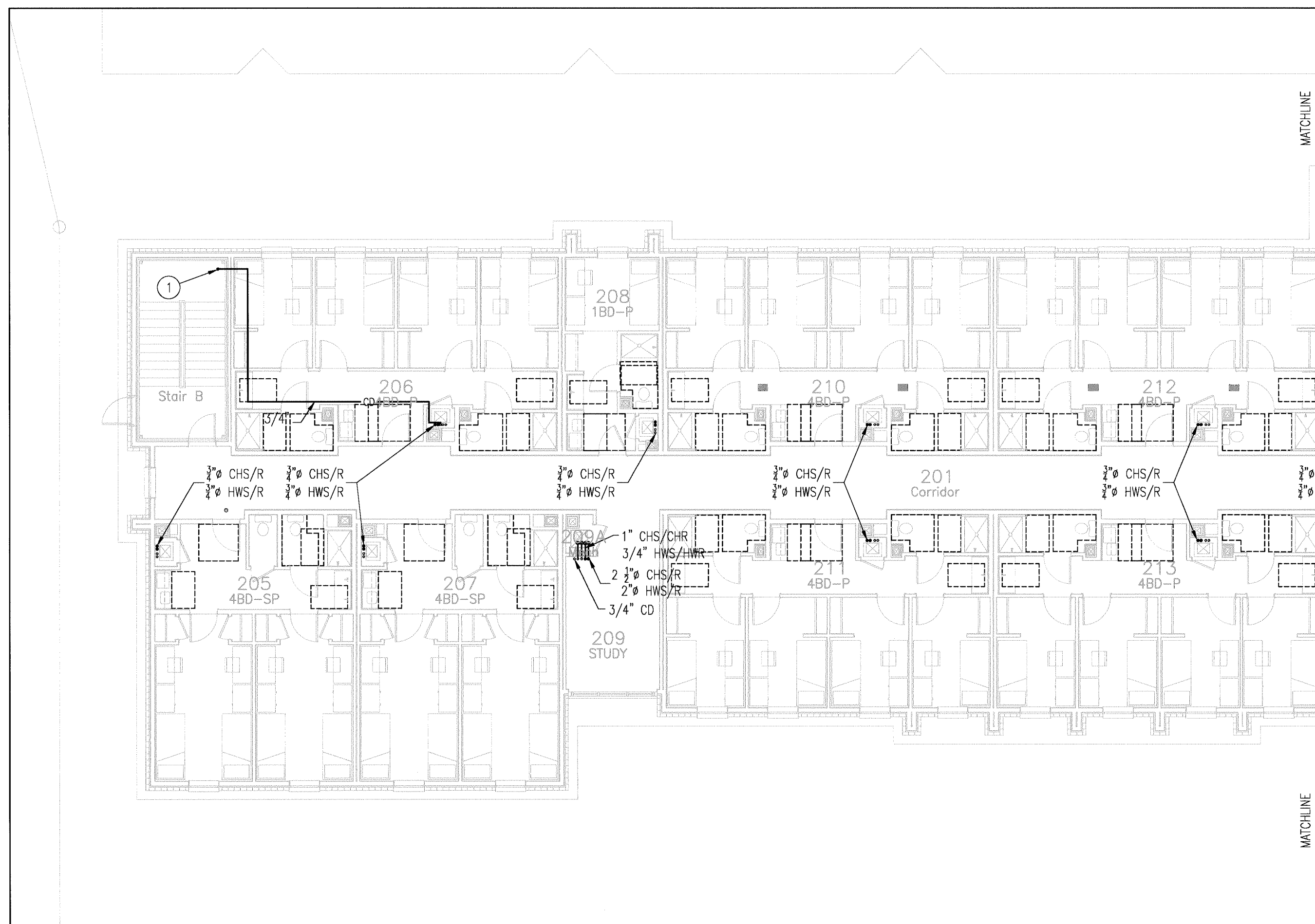
X7 INDICATES DETAIL / LOCATION NUMBER
X1.1 INDICATES DRAWING TO REFERENCE



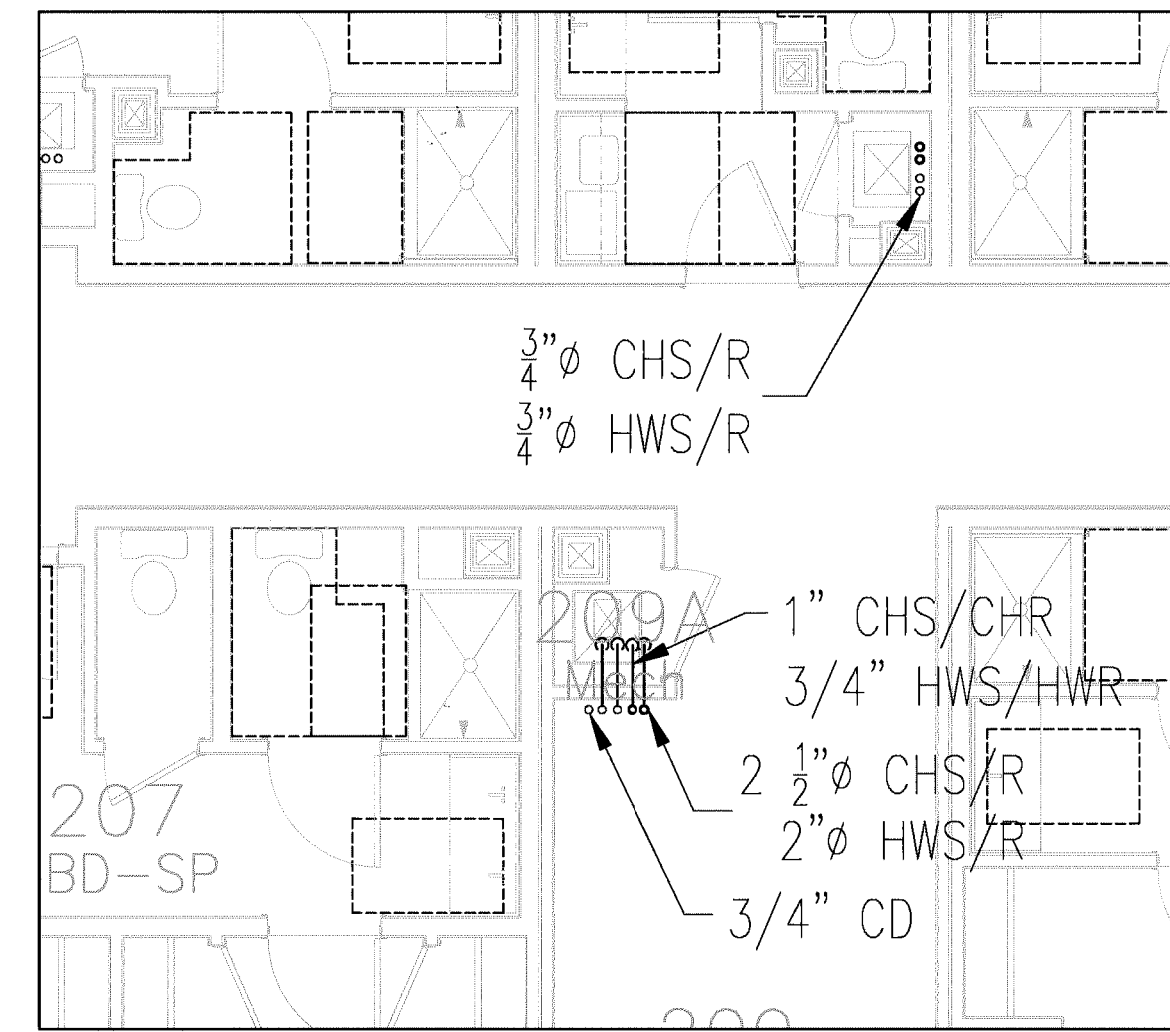
7 MECHANICAL ROOM 37A / 151B ENLARGED PLAN
SCALE: 1/4" = 1'-0"

PROJECT RECORDS

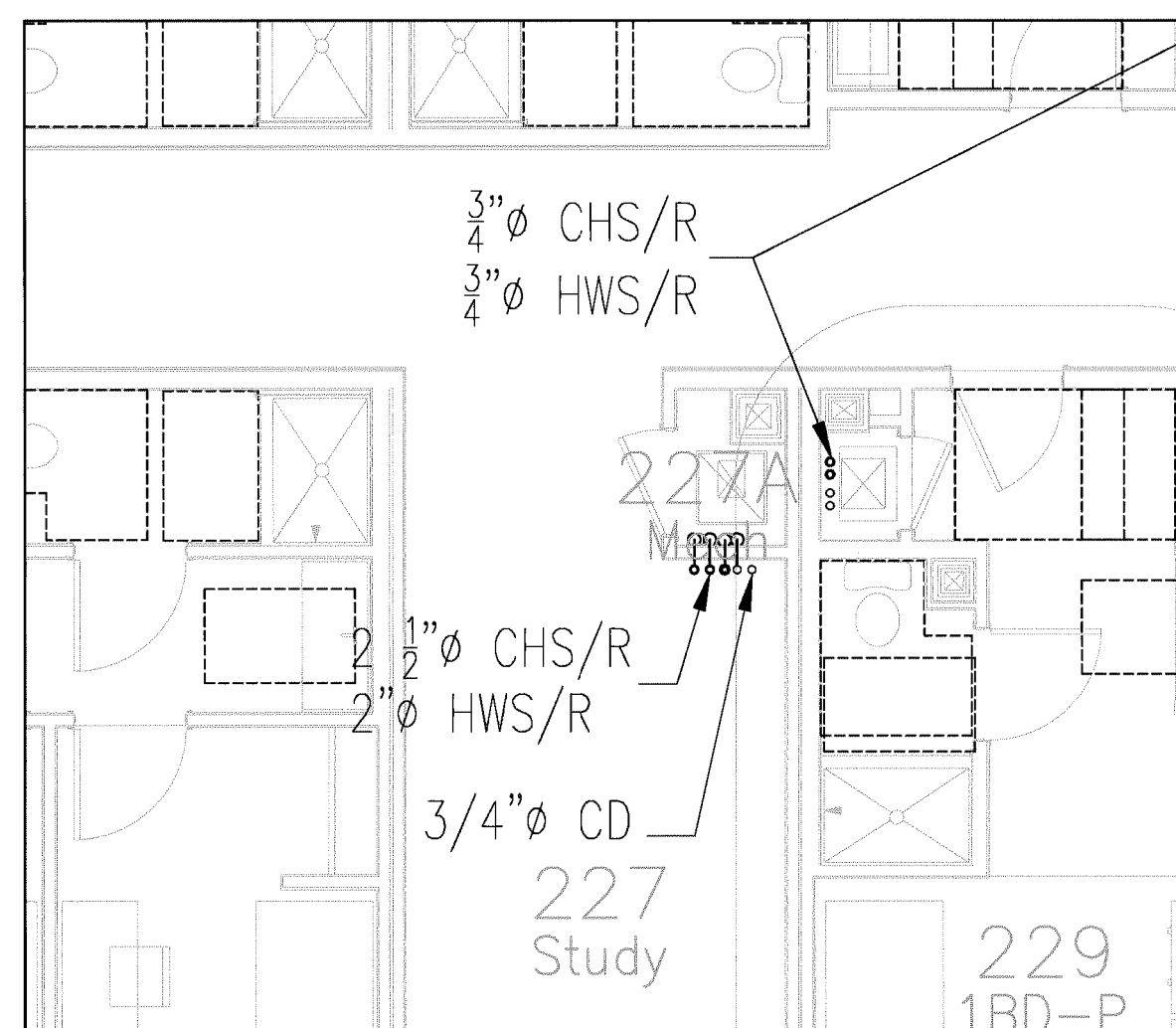
EAGLE Contracting
AS-BUILT DRAWINGS
NTS



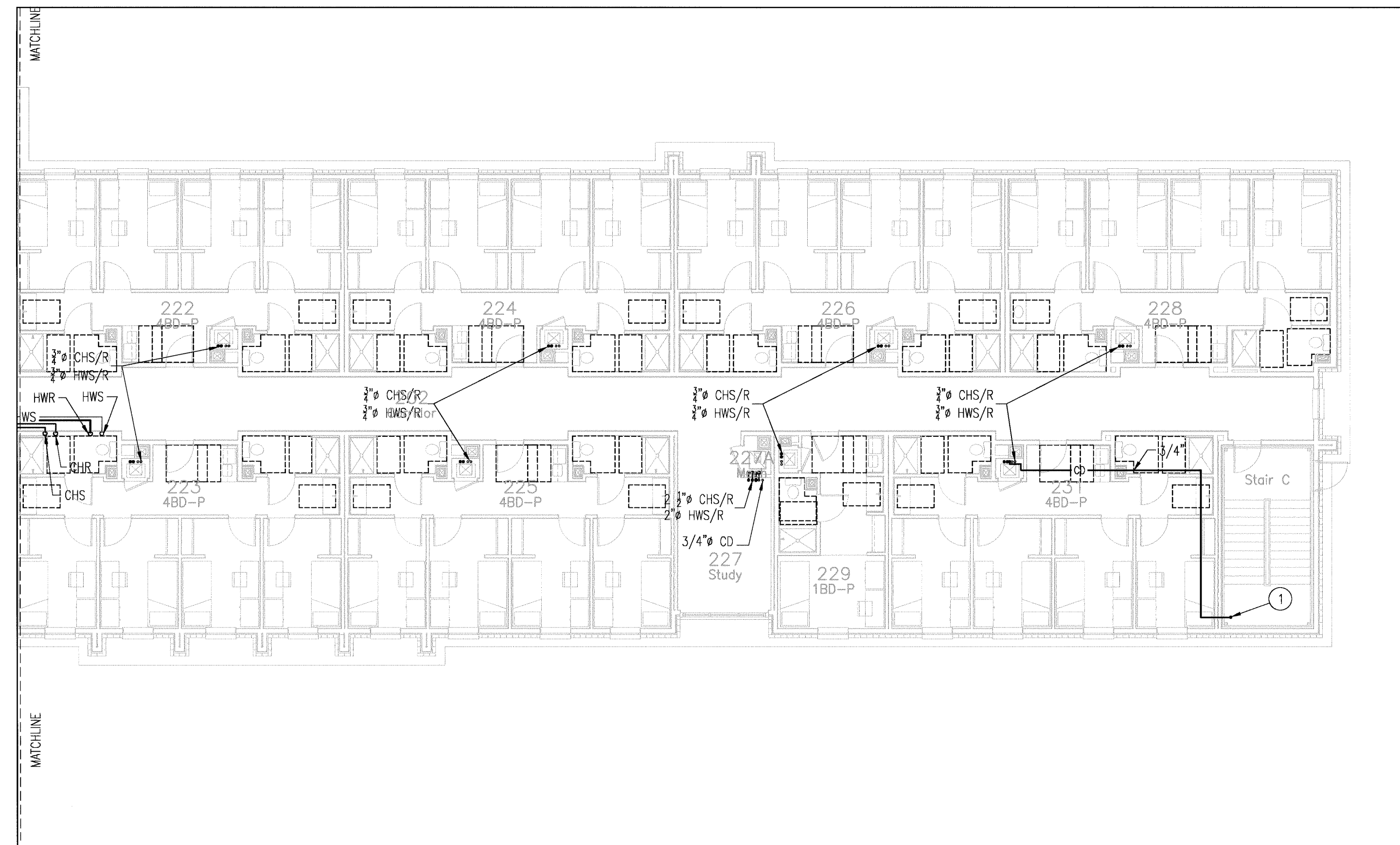
1 Mechanical Plan - West Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'



2 MECH ROOM 109A ENLARGED PLAN
 SCALE: 1/4" = 1'-0"



3 MECH ROOM 127A ENLARGED PLAN
 SCALE: 1/4" = 1'-0"

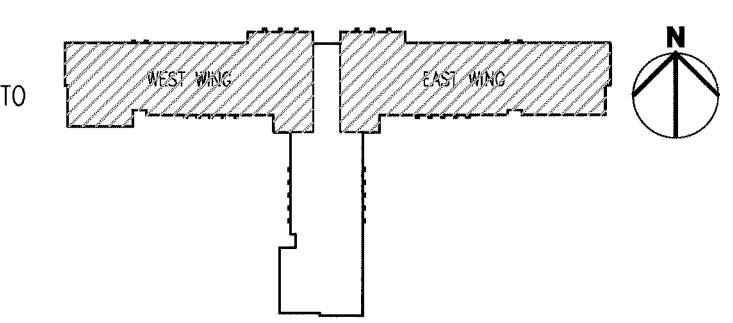


4 Mechanical Plan - East Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

MECH. KEY NOTES

- 1 CONDENSATE FROM FAN COIL UNIT ABOVE. ROUTE TO CONDENSATE RISER.

KEY MAP



MECHANICAL LEGEND

- TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- TURNING VANES
- DUCT TRANSITION
- RETURN DUCT W/SMOKE/FIRE DAMPER
- VOLUME DAMPER
- FIRE DAMPER
- SMOKE/FIRE DAMPER
- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

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MARSHALL ENGINEERING CORPORATION
 1830 MEDICAL BLDG
 HOUSTON, TX 77046
 PHONE: (281) 963-4131
 FAX: (281) 963-4131
 E-MAIL: marshall@me.com

New Student Housing Project
 Blinn College
 Brenham, Texas

Record Drawings

8 / 10

PROJECT RECORD

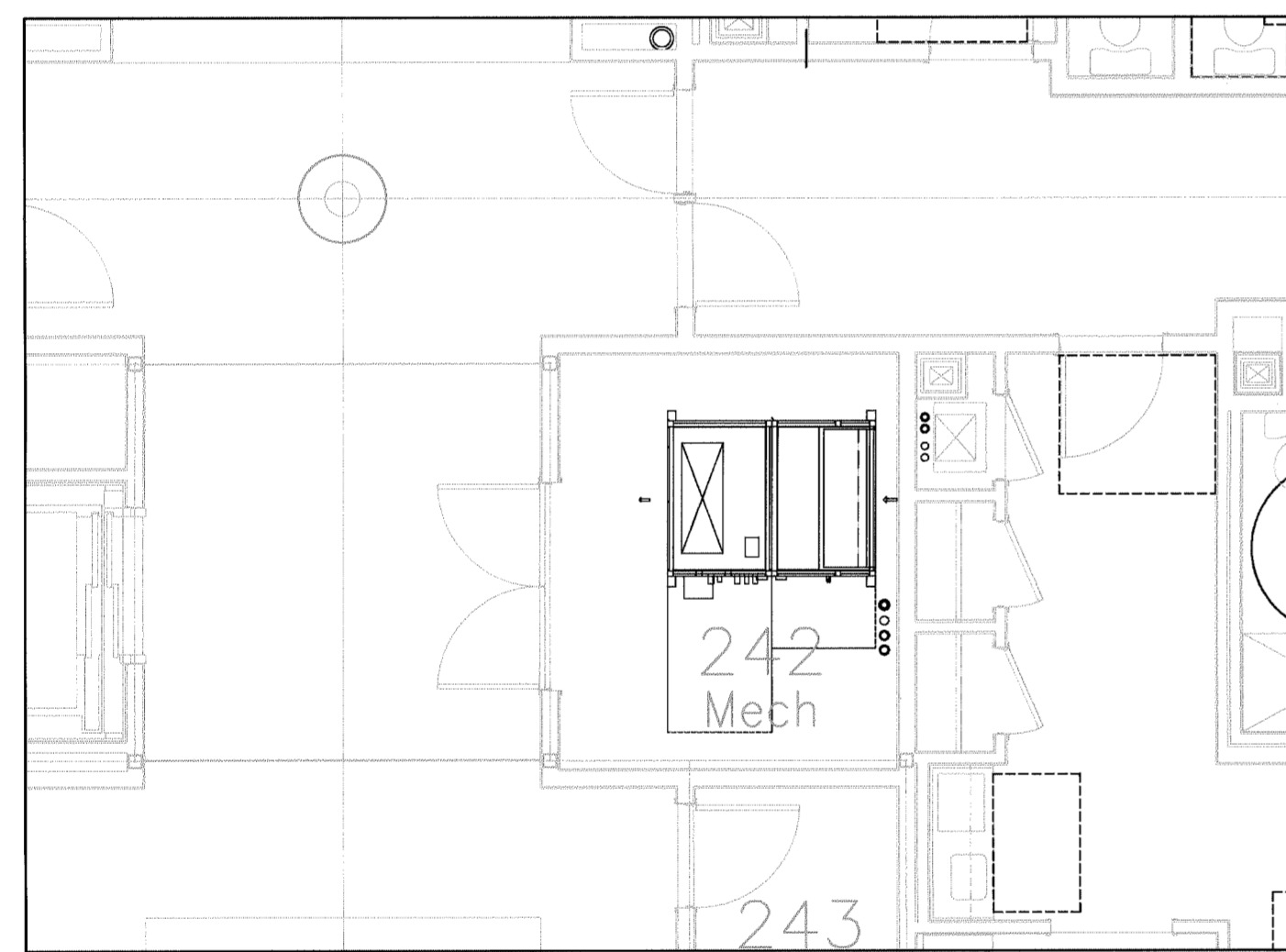
EAGLE CONTRACTING
 AS-BUILT DRAWINGS
 NTS

RECORD DRAWINGS
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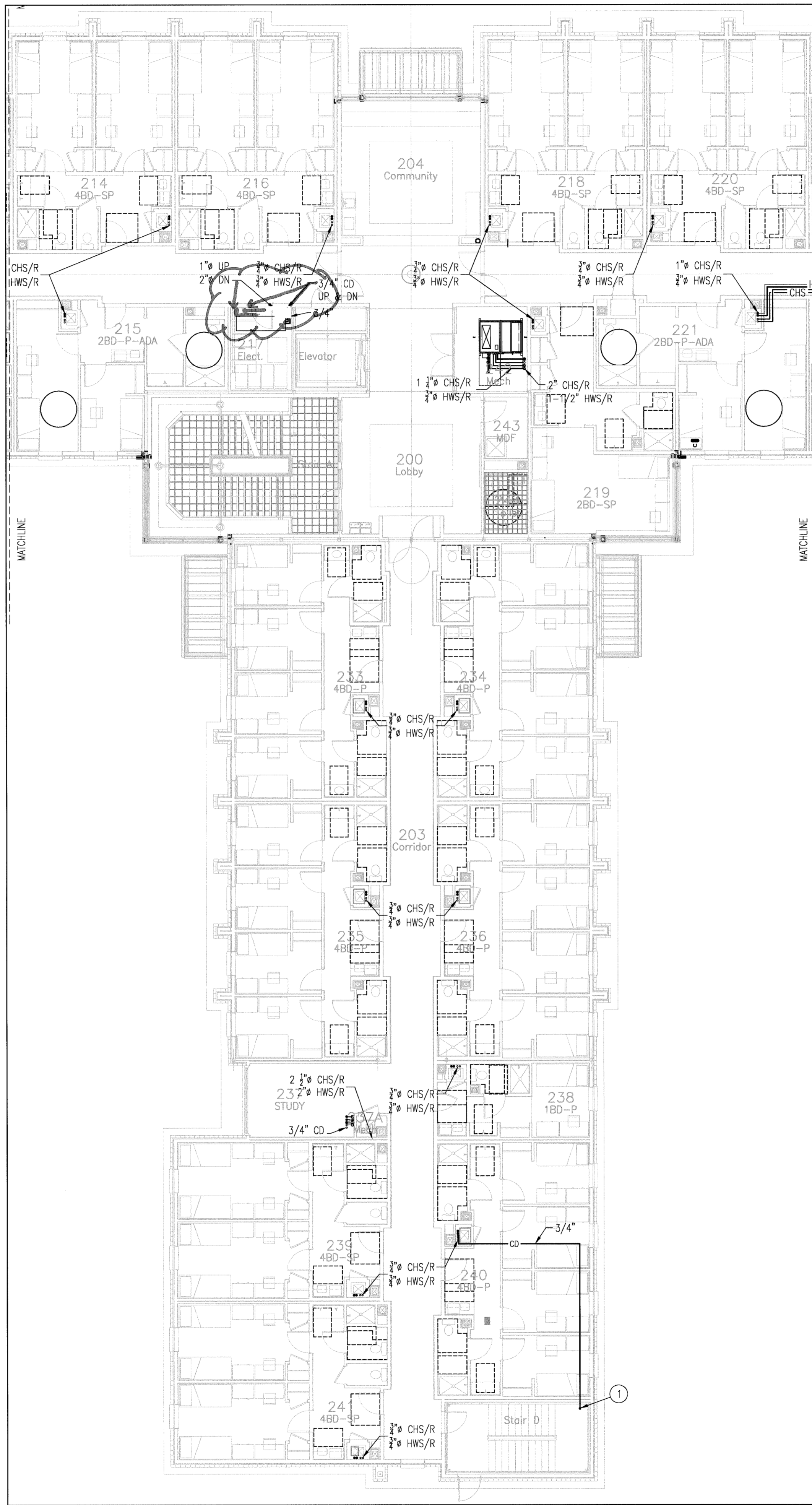
APPENDUM #5
 7/22/10
 RFI # 26
 11/22/10

NEW SHEET
MP2.1

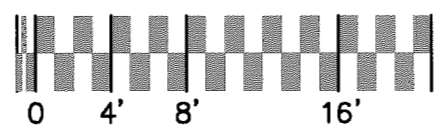
Mechanical Piping Second Floor Plan - West and East Wings
 Scale As Indicated



5 MECHANICAL ROOM 142 ENLARGED PLAN
SCALE: 1/4" = 1'-0"



6 Mechanical Plan - South Wing and Lobby
SCALE: 1/8" = 1'-0"

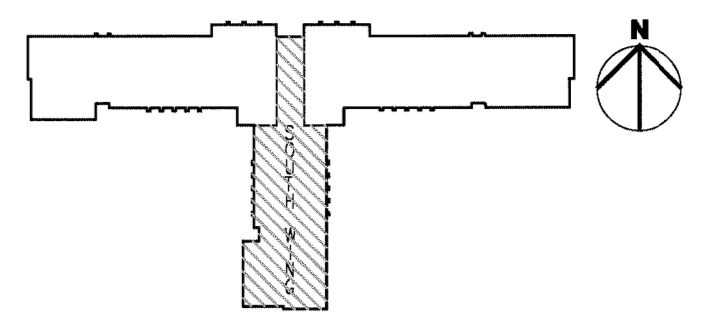


Mechanical Piping First Floor Plan - South Wing and Lobby
Scale: As Indicated

MECH. KEY NOTES

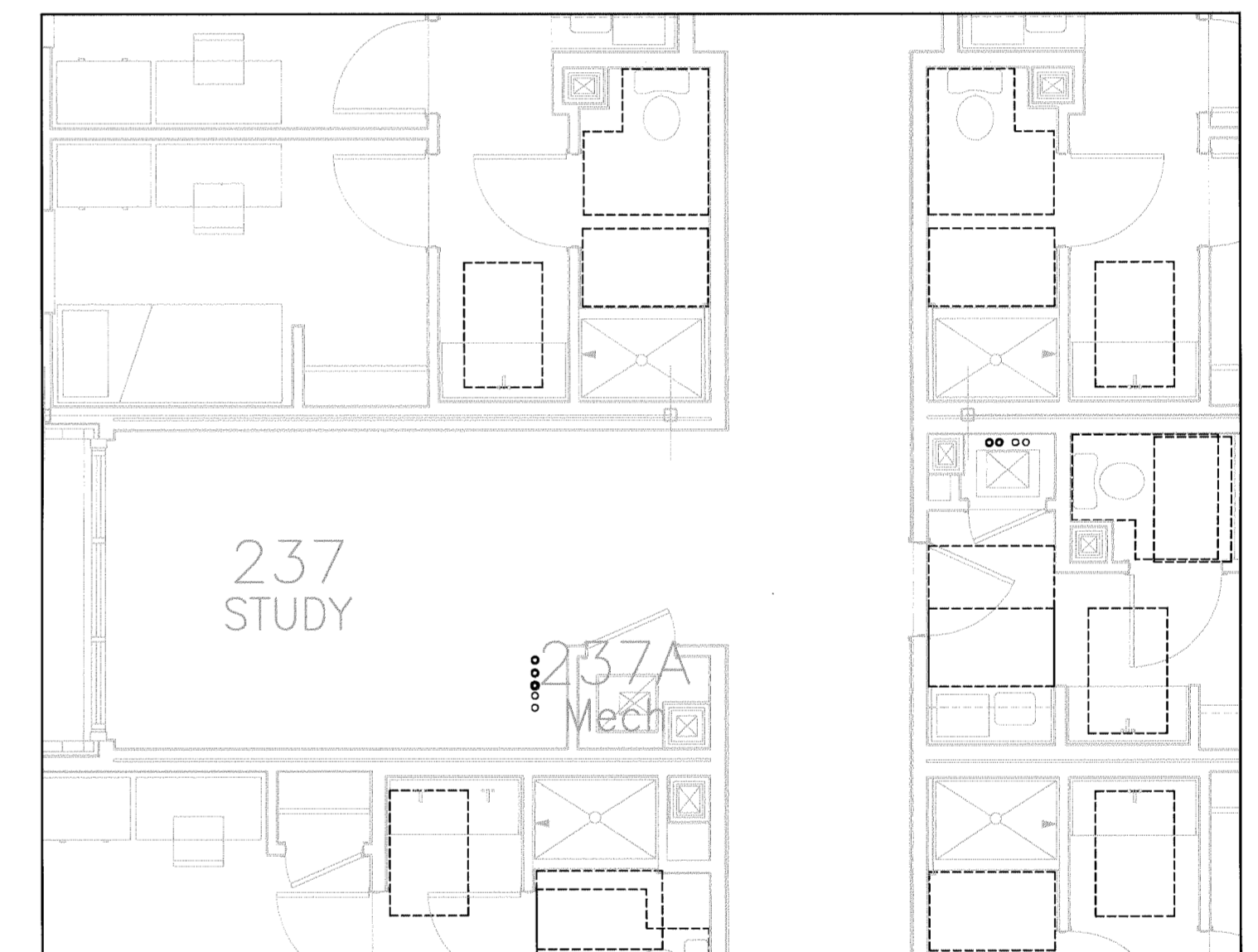
- ① CONDENSATE FROM FAN COIL UNIT ABOVE. ROUTE TO CONDENSATE RISER.

KEY MAP



MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
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- ☐ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
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- ⌞ DUCT TRANSITION
- ⌞ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⊖ VOLUME DAMPER
- ⊖ FIRE DAMPER
- ⊖ SMOKE/FIRE DAMPER
- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE



7 MECHANICAL ROOM 37A / 151B ENLARGED PLAN
SCALE: 1/4" = 1'-0"

EAGLE CONTRACTING
AS BUILT DRAWINGS

NTS

PROJECT REC

MARSHALL
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Record Drawings

Project

New Student Housing
Blinn College
Brenham, Texas

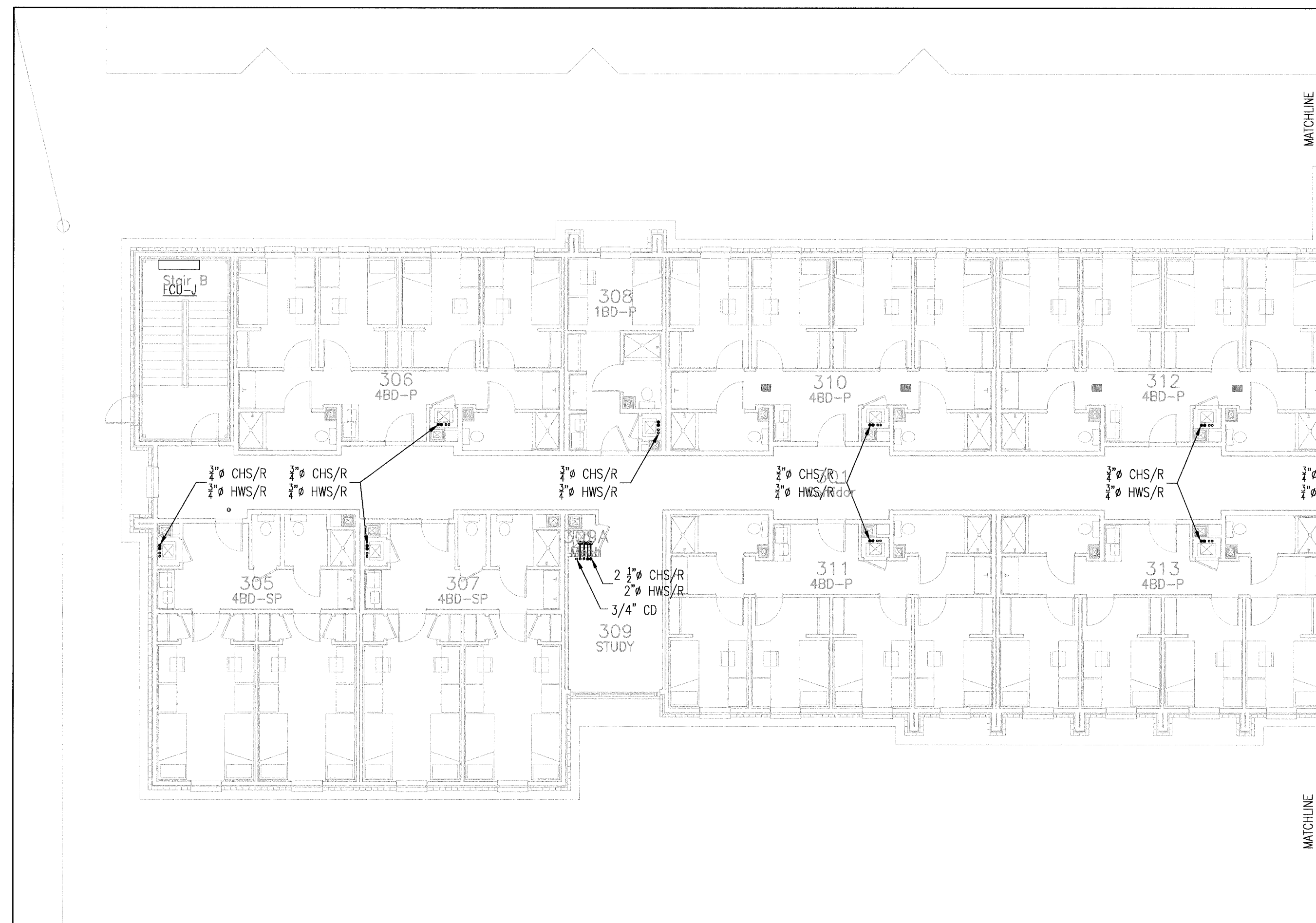
RECORD DRAWINGS
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ADDENDUM #5
1/22/10

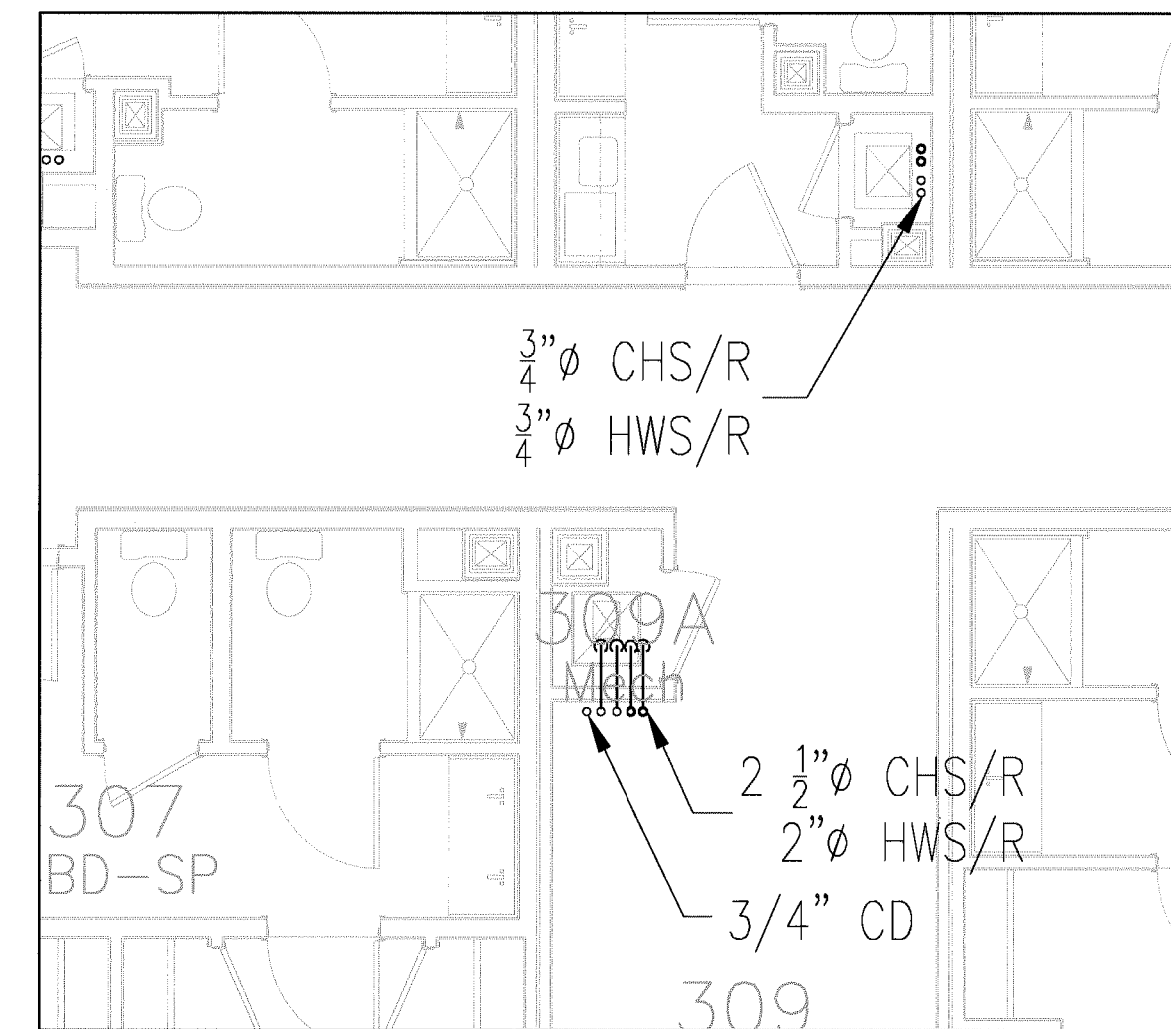
NEW SHEET

MP2.2

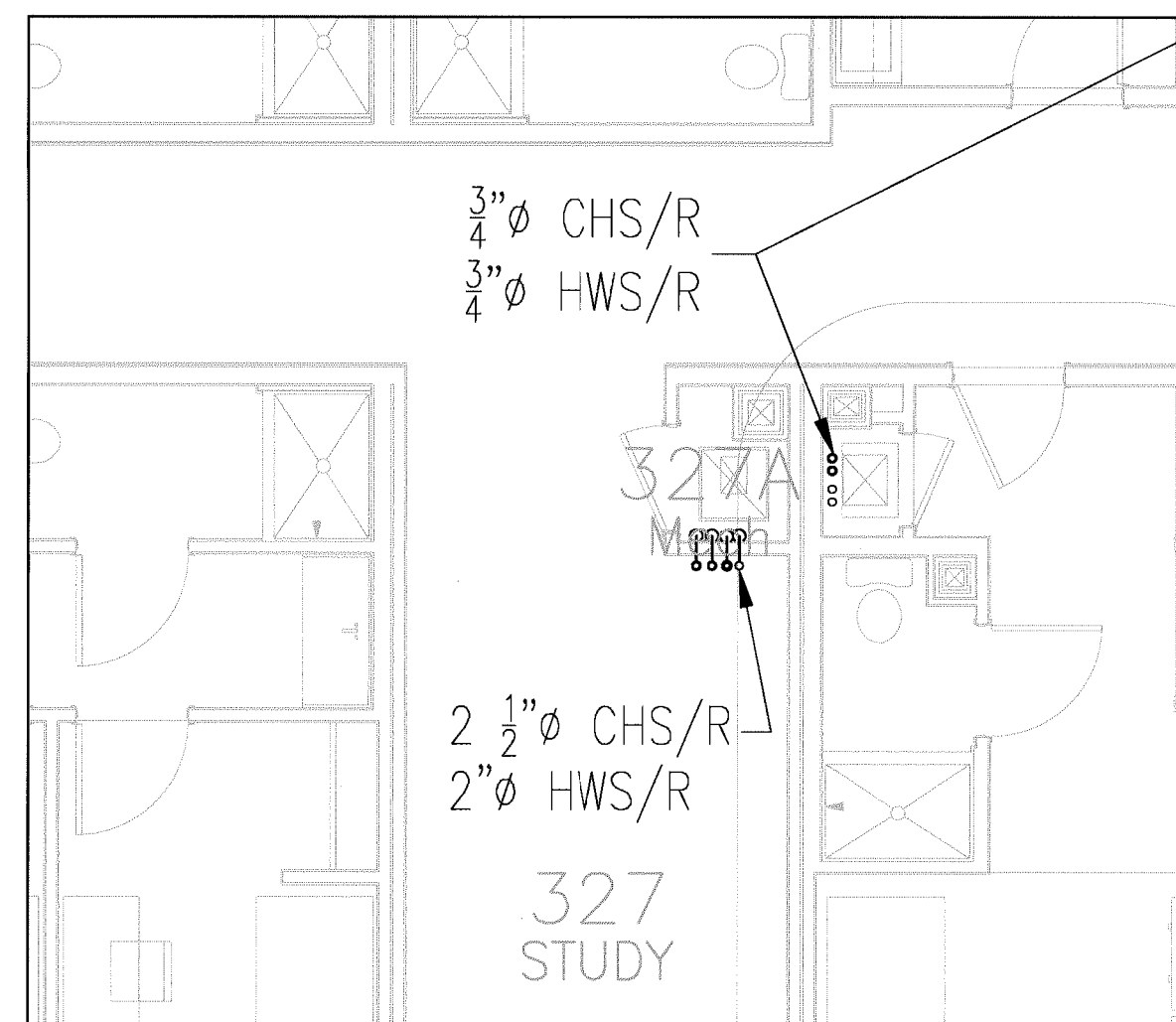
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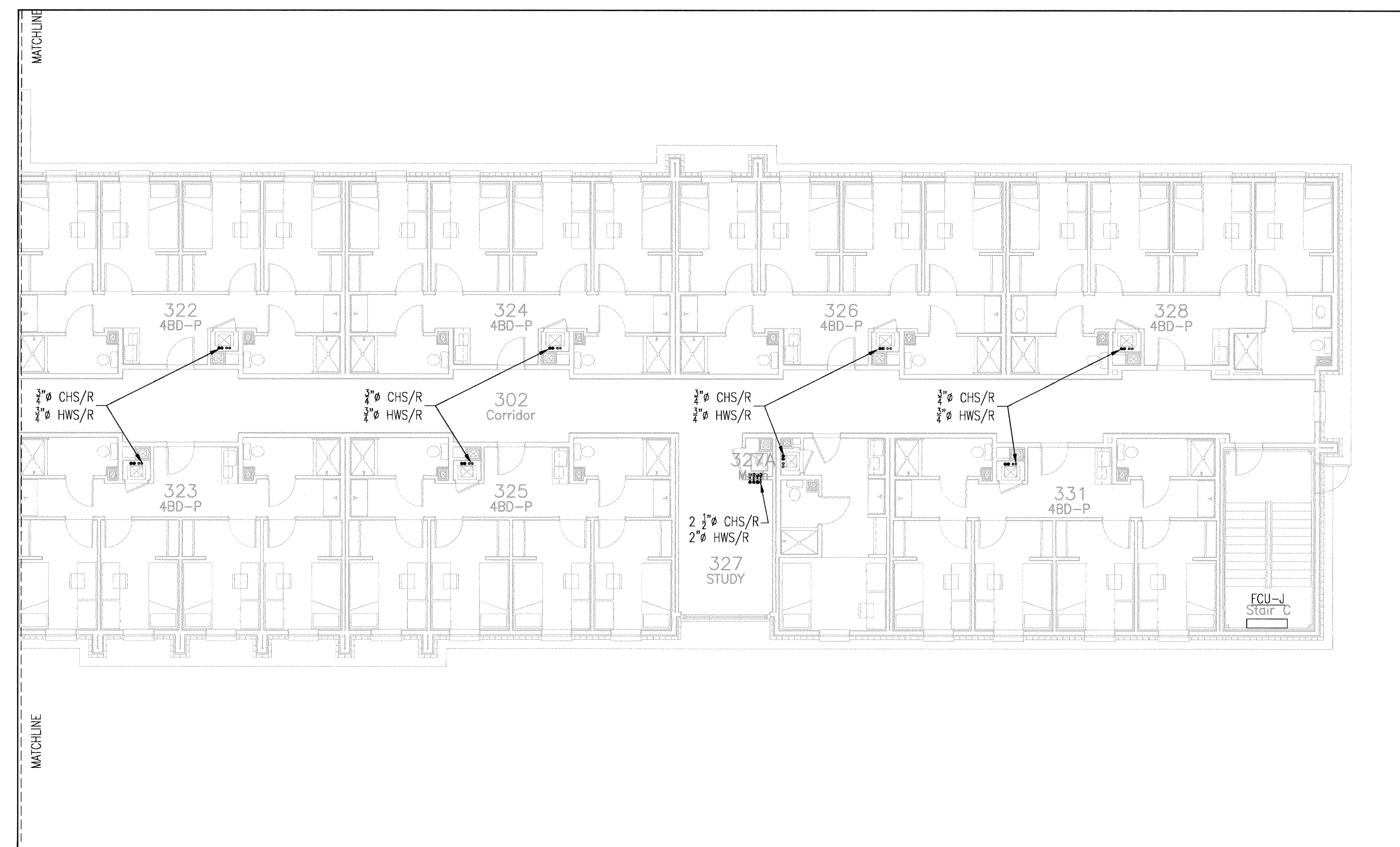
1 Mechanical Plan - West Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'



2 MECH ROOM 309A ENLARGED PLAN
 SCALE: 1/4" = 1'-0"



3 MECH ROOM 327A ENLARGED PLAN
 SCALE: 1/4" = 1'-0"

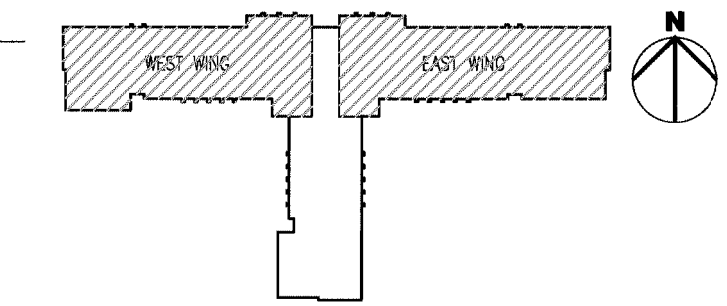


4 Mechanical Plan - East Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

MECH. KEY NOTES

- 1 XXX
- 2
- 3
- 4

KEY MAP



MECHANICAL LEGEND

- TEMPERATURE SENSOR SEE SPECIFICATIONS.
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- ⌘ DUCT TRANSITION
- ⌘ RETURN DUCT W/SMOKE/FIRE DAMPER
- VOLUME DAMPER
- ⌘ FIRE DAMPER
- ⌘ SMOKE/FIRE DAMPER
- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

PROJECT RECORDS

EGGLE CONTRACTING
 AS-BUILT DRAWINGS
 NTS

Mechanical Piping Third Floor Plan - West and East Wings
 Scale: As Indicated

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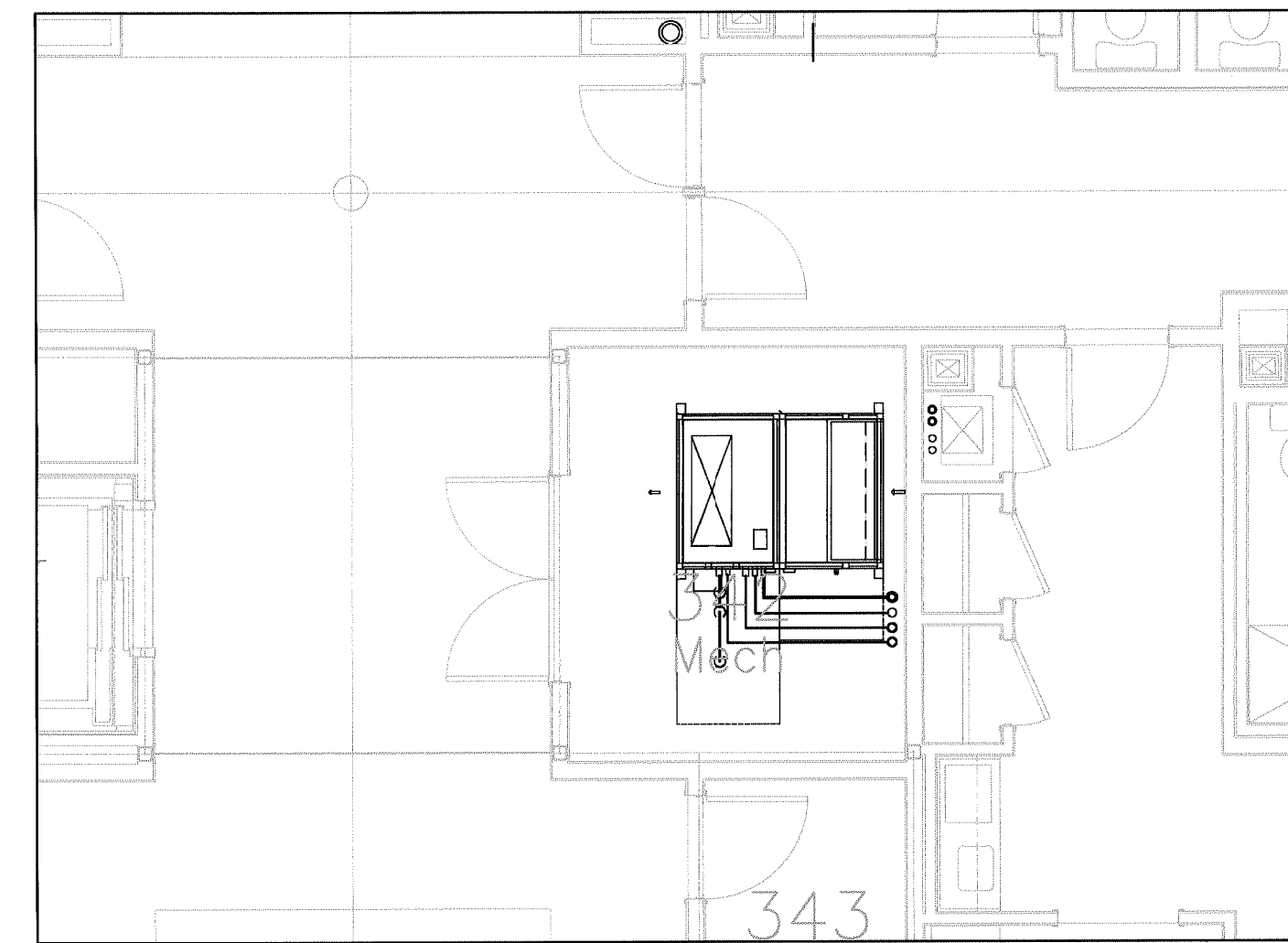
MARSHALL
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 14830 MEDICAL CENTER
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 PHONE: (281)862-4131
 FAX: (281)862-4631
 WWW: marshalleng.com

Record Drawings
 New Student Housing Project
 Blinn College
 Brenham, Texas

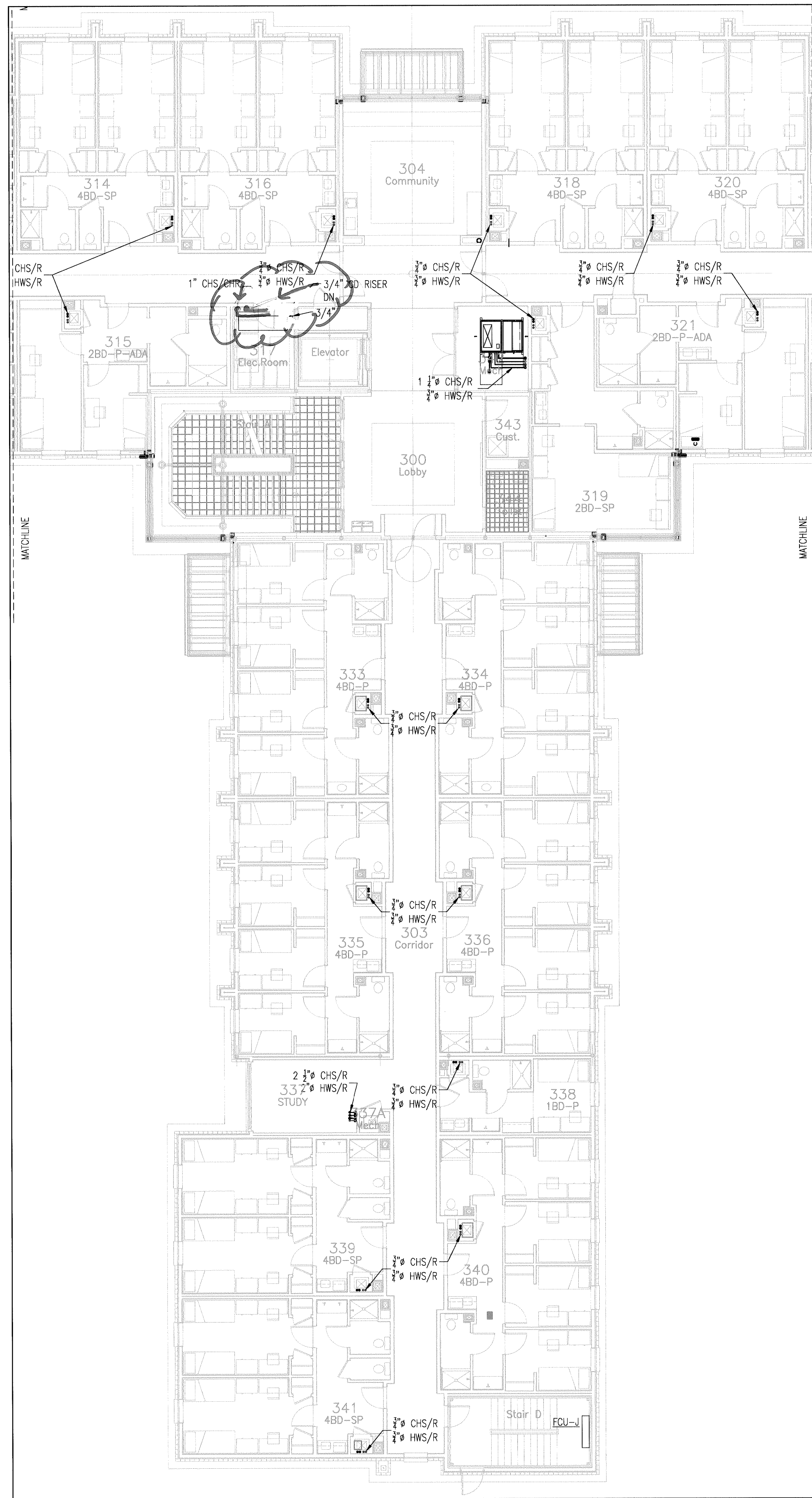
RECORD DRAWINGS
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APPENDIX #5
 7/22/10

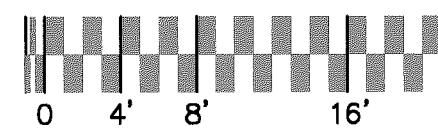
NEW SHEET
MP3.1



5 MECHANICAL ROOM 342 ENLARGED PLAN
SCALE: 1/4" = 1'-0"



6 Mechanical Plan - South Wing and Lobby
SCALE: 1/8" = 1'-0"

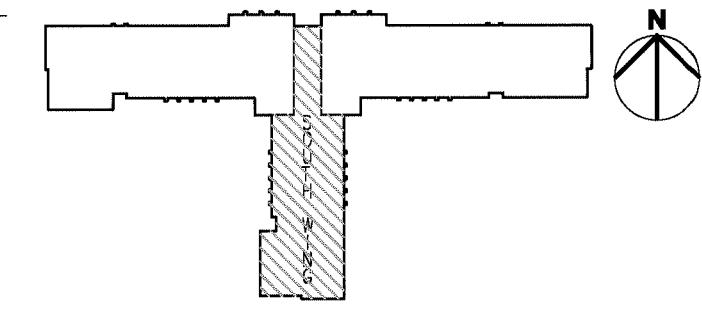


Mechanical Piping Third Floor Plan - South Wing and Lobby
Scale: As Indicated

MECH. KEY NOTES

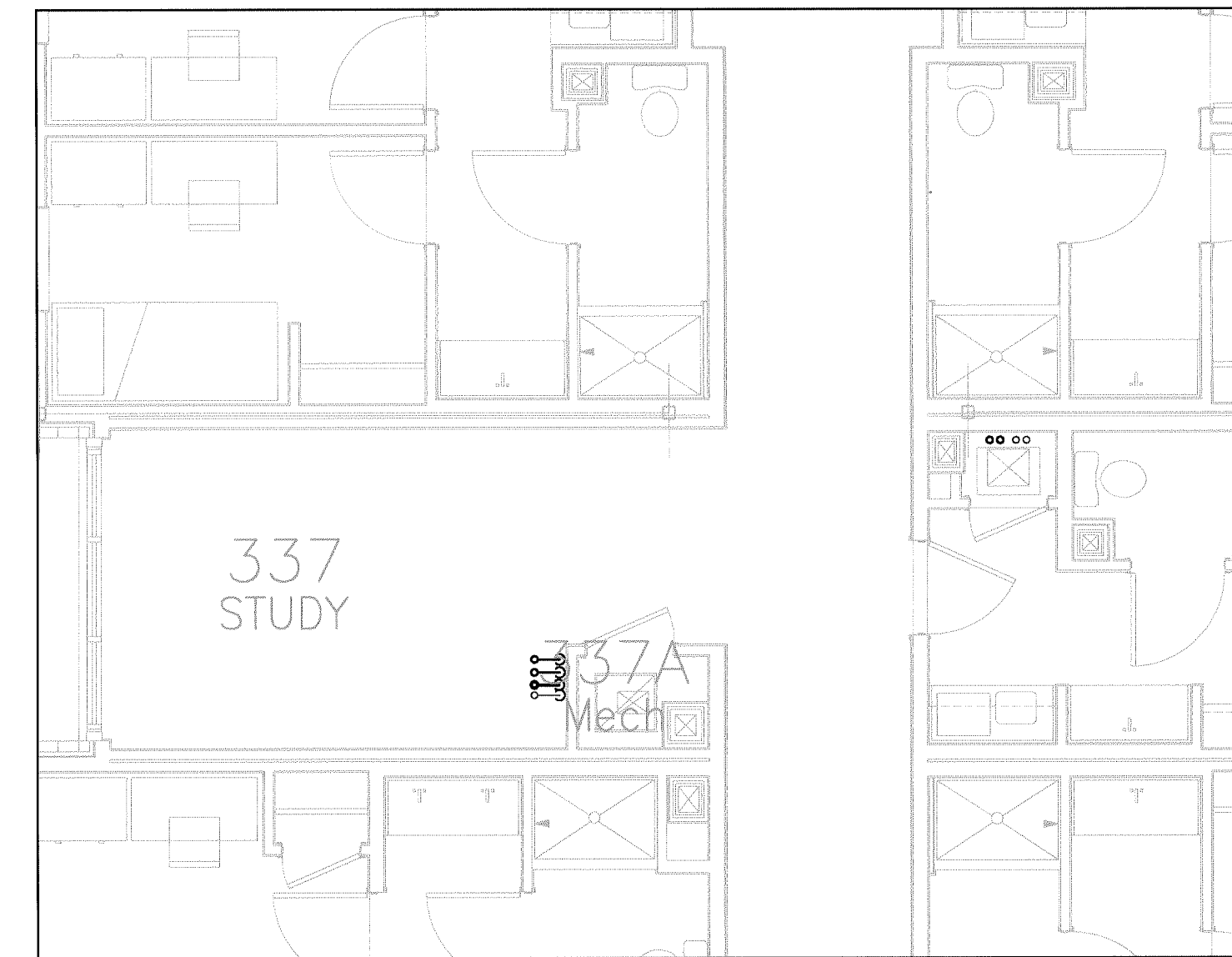
- ① xxx
- ②
- ③
- ④

KEY MAP



MECHANICAL LEGEND

- ① TEMPERATURE SENSOR SEE SPECIFICATIONS.
- ② SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
- ③ RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
- ④ TURNING VANES
- ⑤ DUCT TRANSITION
- ⑥ RETURN DUCT W/SMOKE/FIRE DAMPER
- ⑦ VOLUME DAMPER
- ⑧ FIRE DAMPER
- ⑨ SMOKE/FIRE DAMPER
- X7 INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE



7 MECHANICAL ROOM 337A
SCALE: 1/4" = 1'-0"

EAGLE CONTRACTING
As-built Drawings
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PROJECT RECORDS
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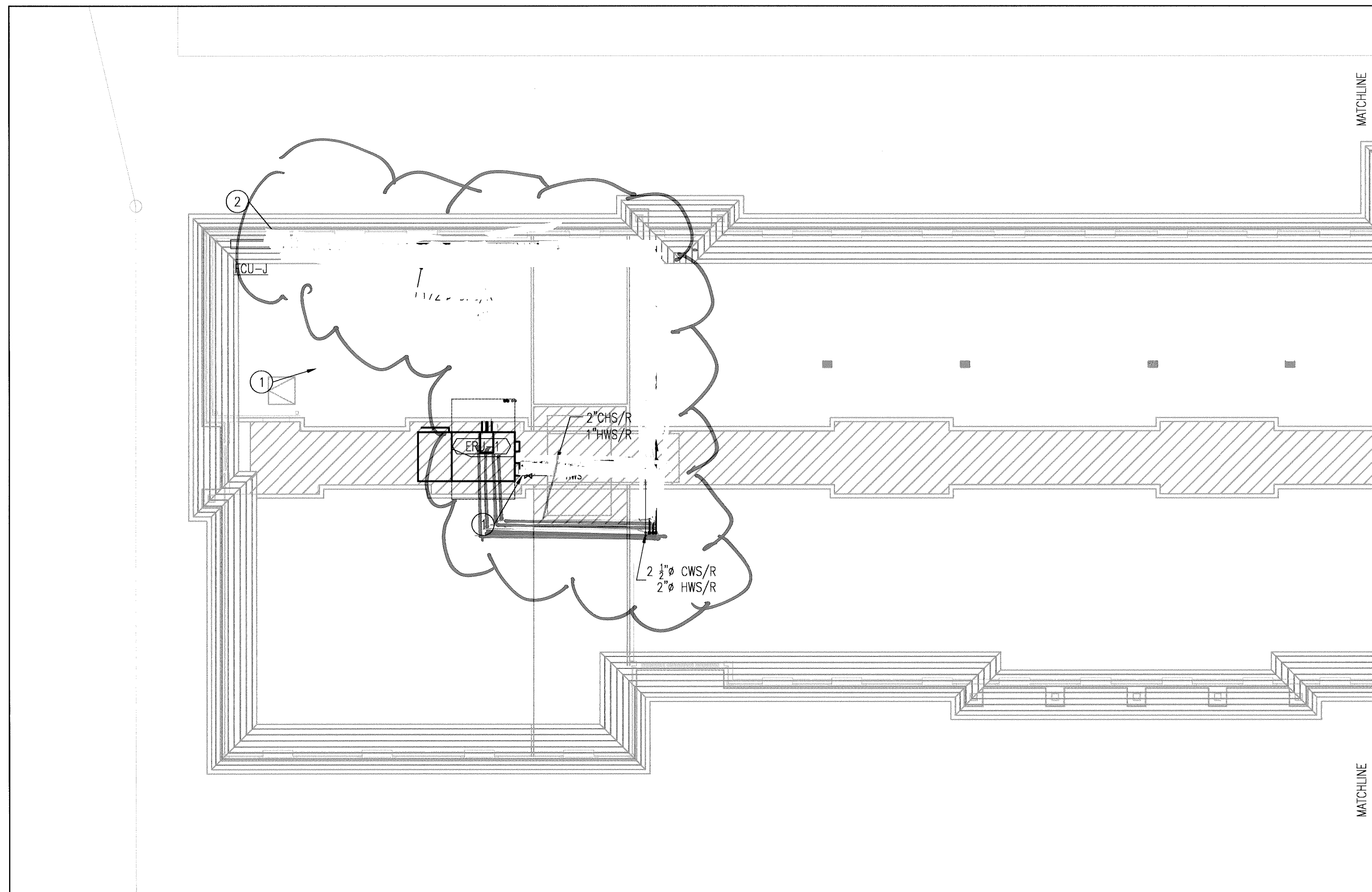
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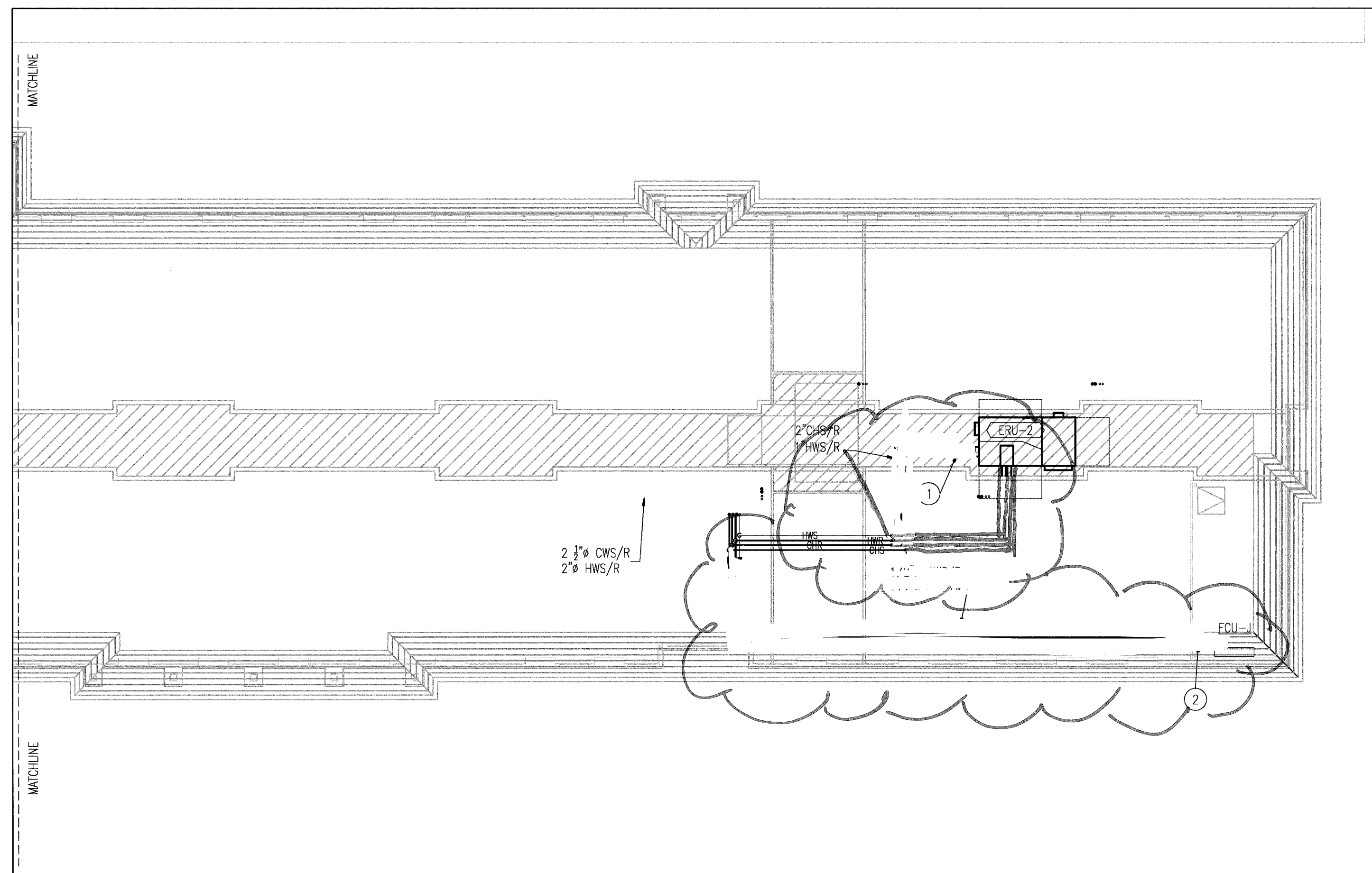
Project
New Student Housing
Blinn College
Brenham, Texas

RECORD DRAWINGS
8 / 27 / 11
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ADDENDUM #3
1/22/10

MP3.2



1 Mechanical Plan - West Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

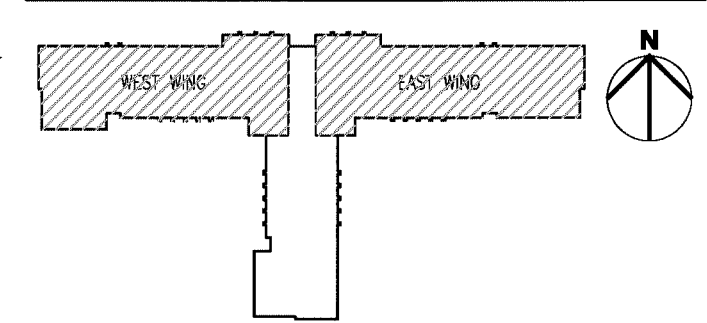


2 Mechanical Plan - East Wing
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

MECH. KEY NOTES

- 1 PROVIDE FINAL CONNECTIONS TO ENERGY RECOVERY UNITS. PROVIDE 1" CONDENSATE DRAIN TO NEAREST CONDENSATE RISER BELOW.
- 2 PROVIDE FINAL CONNECTIONS TO FAN COIL UNITS ON THIRD FLOOR BELOW.

KEY MAP



MECHANICAL LEGEND

- ⊙ TEMPERATURE SENSOR SEE SPECIFICATIONS.
- SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
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- ⊞ FIRE DAMPER
- ⊞ SMOKE/FIRE DAMPER
- ⊞ INDICATES DETAIL/ LOCATION NUMBER
- X1.1 INDICATES DRAWING TO REFERENCE

Mechanical Attic Piping Plan - West and East Wings
 Scale: As Indicated

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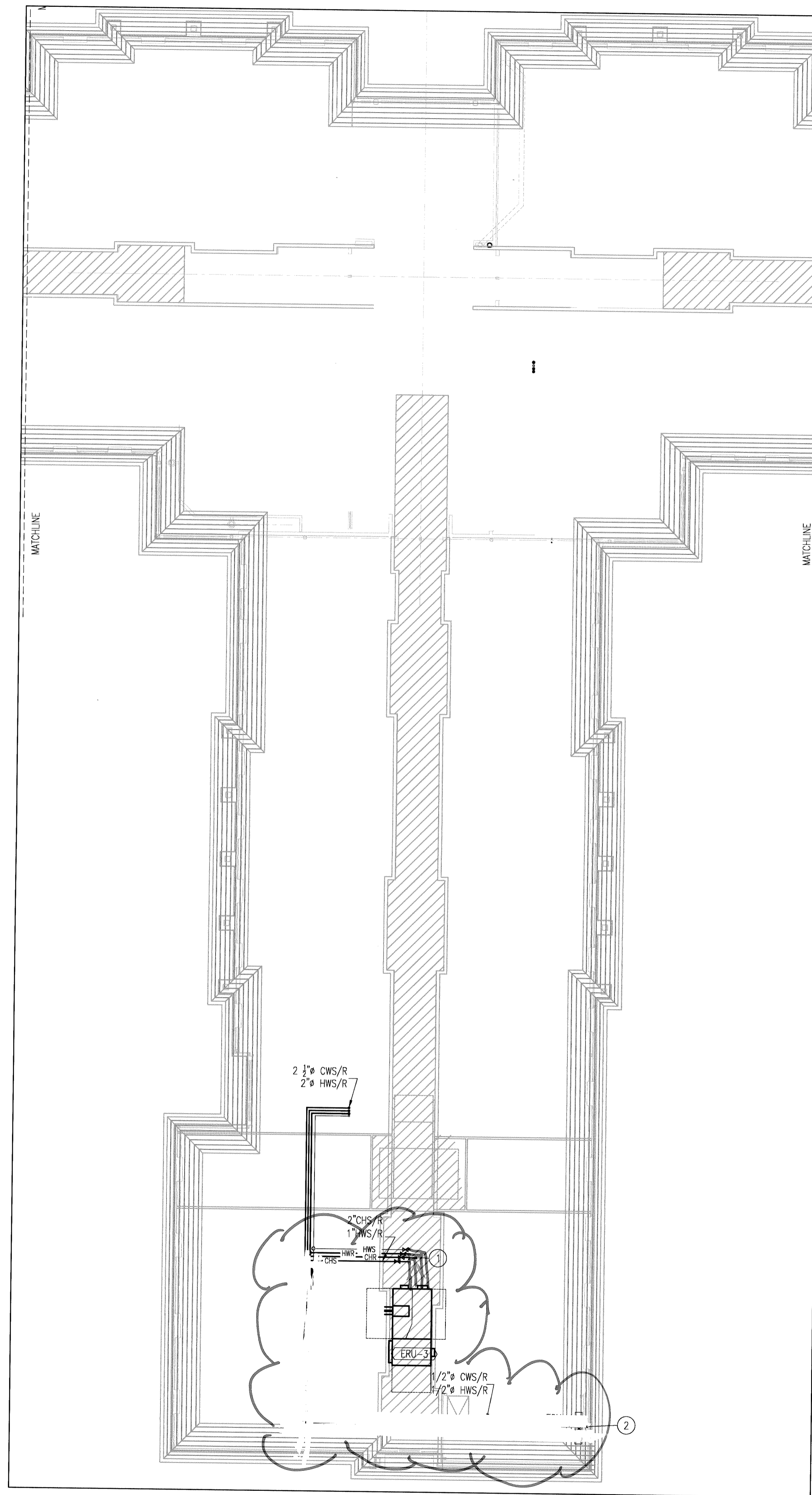
Record Drawings

New Student Housing Project
 Blinn College
 Brenham, Texas

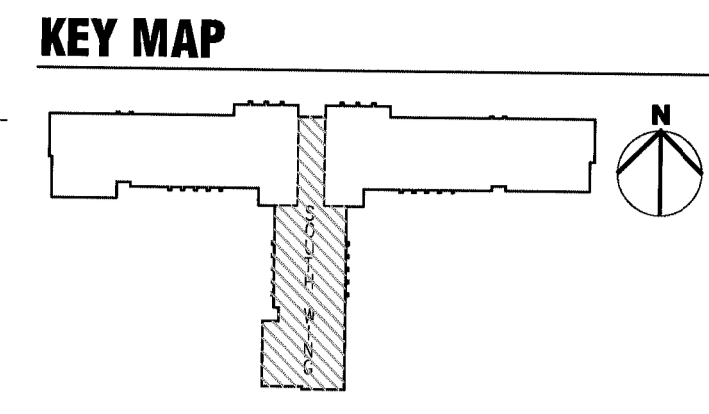
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EAGLE CONTRACTING
 As-built Drawings
 NTS
 PROJECT RECORDS

NEW SHEET
MP4.1



- MECH. KEY NOTES**
- 1 PROVIDE FINAL CONNECTIONS TO ENERGY RECOVERY UNITS. PROVIDE 1" CONDENSATE DRAIN TO NEAREST CONDENSATE RISER BELOW.
 - 2 PROVIDE FINAL CONNECTIONS TO FAN COIL UNITS ON THIRD FLOOR BELOW.



- MECHANICAL LEGEND**
- TEMPERATURE SENSOR SEE SPECIFICATIONS.
 - SUPPLY GRILLE: TYPE / CFM, SEE SCHEDULE DESCRIPTION
 - RETURN GRILLE: TYPE / CFM, SEE SCHEDULE FOR DESCRIPTION.
 - TURNING VANES
 - DUCT TRANSITION
 - RETURN DUCT W/SMOKE/FIRE DAMPER
 - VOLUME DAMPER
 - FIRE DAMPER
 - SMOKE/FIRE DAMPER
 - INDICATES DETAIL/ LOCATION NUMBER
 - INDICATES DRAWING TO REFERENCE

3 Mechanical Plan - South Wing and Lobby
 SCALE: 1/8" = 1'-0"
 0 4' 8' 16'

Mechanical Attic Piping Plan - South Wing and Lobby
 Scale: As Indicated

ENGLE Contracting
 As-Built Drawings
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PROJECT RECORDS

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Record Drawings

New Student Housing Project
 Blinn College
 Brenham, Texas

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APPENDIX #5
 1/22/10

NEW SHEET
 MP4.2