

FITZSIMONS BUILDING HEATING UPGRADE PROJECT B

PROJECT 21-174018

FOR CONSTRUCTION SET
DECEMBER 16, 2022

MECHANICAL AND ELECTRICAL ENGINEER



Mechanical and Electrical Engineering
Energy Consulting Sustainable Design

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Save Date 16-Dec-22 by bfober
Plotted on 12/16/2022

TAG	DESCRIPTION	ELECTRICAL				NOTES
		POWER	AMPS	V	PH	
EXP-9E2	EXPANSION TANK, VERTICAL, BLADDER TYPE, REQUIRED MINIMUM ACCEPTANCE VOLUME - 64 GALS, REQUIRED MINIMUM TANK VOLUME - 140 GALS, AMTROL EXTROL MODEL 600L, ASME 30" DIAMETER, 65" HIGH.	N/A	-	-	-	1
GF	GLYCOL FEEDER, SEE SPECIFICATION 23 25 00, WATER TREATMENT	-	-	120	1	PLUG-IN POWER, EXISTING

TAG	SERVICE	TYPE	GPM	H ₂ O (FT)	RPM	Peid	MOTOR CONTROL TYPE	HP	ELCT. TRN.	PH	MANUFACTURER & MODEL	NOTES
HSP-301	EAST WING HEATING	HORIZ. BASE MOUNTED	510	96.00	1,743	-	VFD W BYPASS	20	460	3	ARMSTRONG 4030 - 5x4x11.5-4P	1,2
HSP-302	EAST WING HEATING	HORIZ. BASE MOUNTED	510	96.00	1,743	-	VFD W BYPASS	20	460	3	ARMSTRONG 4030 - 5x4x11.5-4P	1,2

AC	TYPE	BUHLF	W	FT	GRM	ELEMENT	ENDORSER	MAJOR FINDER & MODEL	NOTES
A	FINTUBE	1308	-	8.1	B, 4-1/2"x4-1/2"	EXISTING	STERLING VERSALINE C45	1, 4	
B	FINTUBE	2030	-	8.0	B, 4-1/2"x4-1/2"	EXISTING	STERLING VERSALINE C45	2, 4	
C	FINTUBE	814	-	5.1	B, 4-1/2"x4-1/2"	EXISTING	STERLING VERSALINE C45	3, 4	

TAG	TYPE	MBH	GPM	FT. HD.	GPM	RPM	VPH	FLA	OPD	& MODEL	NOTES
CUH-Q20-G-003	RECESSED WALL	51.3	5.2	310	625	-	115	0.9	15	STERLING RW SIZE 06	1, 2, 3, 4, 5, 6
CUH-Q20-G-004	RECESSED WALL	35.3	3.6	120	635	-	115	0.9	15	STERLING RW SIZE 06	1, 2, 3, 4, 5

SEE DETAILS, SHEET M4.1 FOR PIPING INSTALLATIONS

Item	W (N)	H (N)	D (N)	W (L+3)	H (H+3)	QTY	Notes	
BB-Q20-05E-001	E5304	32	22	8	39	23	1 RITTLING RECESSED, 16 GA	1.2
BB-Q20-04E-001	E4306 (M)	40	22	8	43	26	1 RITTLING RECESSED, 16 GA	1.2
BB-Q20-04E-002	E4307 (W)	44	22	8	51	26	1 RITTLING RECESSED, 16 GA	1.2
BB-Q20-02E-001	E2304	46	22	10	51	26	1 RITTLING RECESSED, 16 GA	1.2
BB-Q20-02E-001	E5330A	28	22	7	31	23	2 RITTLING RECESSED, 16 GA	1.2
BB-Q20-02E-002	E5314	46	24	8	51	26	1 RITTLING RECESSED, 16 GA	1.2
BB-Q20-02E-003	E G STAIR GS02	59	41.5	11	-	-	-	1.3
BB-Q20-03E-001	E 3.5 STAIR 3S02	44	41.5	12	-	-	-	1.3
BB-Q20-05-002	E 5 STAIR 3S05	59	41.5	9.5	-	-	-	1.3
BB-Q20-02E-004	SE G STAIR GS03	59	41.5	11	-	-	-	1.3
BB-Q20-03E-002	SE 3.5 STAIR 3S03	44	41.5	12	-	-	-	1.3

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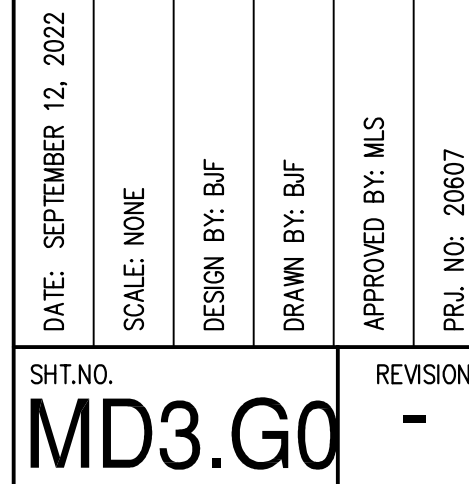
FITZSIMONS BUILDING 500
HEATING UPGRADE MASTERPLAN
MECHANICAL SCHEDULES

DATE: SEPTEMBER 12, 2022					
SCALE: NONE					
DESIGN BY: BJF					
DRAWN BY: BJF					
APPROVED BY: MJS					
PRJ. NO: 20607					
SHT.NO.				REVISION	
M1.1				-	

DATE: SEPTEMBER 12, 2022					
SCALE: NONE					
DESIGN BY: B/J					
DRAWN BY: B/J					
APPROVED BY: M/S					
PRJ. NO: 20607					
SHT.NO.				REVISION	
M1.1				-	



1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
3. EQUIPMENT AND PIPING SHOWN ON THIS DRAWING ARE BASED ON RECORD INFORMATION PROVIDED IN PART BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITION PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.



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HEATING UPGRADE MASTERPLAN

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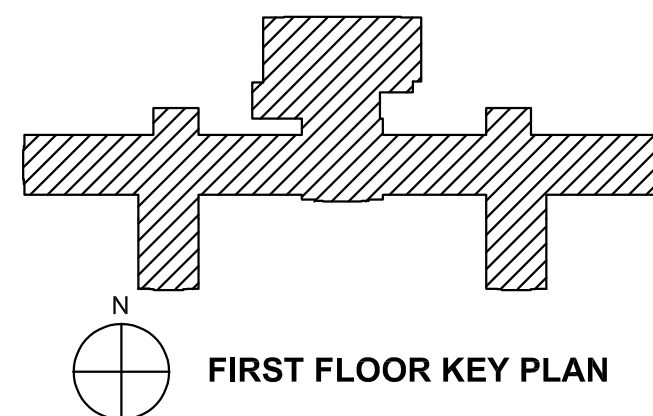
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REV	DATE	DESCRIPTION
-	1/25/22	CONSTRUCTION DOCUMENTS
-	1/25/22	DESIGN DEVELOPMENT



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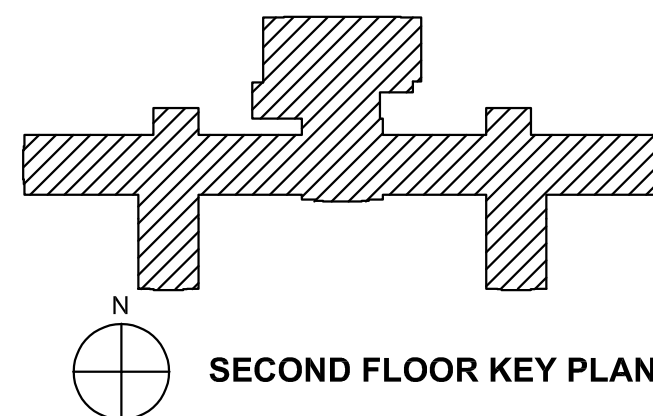


DATE: SEPTEMBER 12, 2022		SHEET NO.	
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DESIGN BY: B/F		REVISION	
DRAWN BY: B/F		1	
APPROVED BY: M/S		REV.	
PRL. NO. 20607		DESCRIPTION	



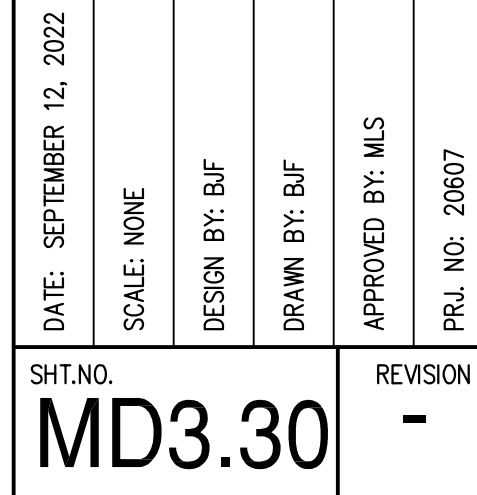
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- ① REMOVE SECTIONS OF 3" HWS/R AS SHOWN. CAP REMAINING PIPING.
- ② REMOVE 5" HWS/R RISER TO ACCOMMODATE FUTURE 6" HWS/R PIPING. SEE M3.20.





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FITZSIMONS BUILDING 500
HEATING UPGRADE MASTERPLAN

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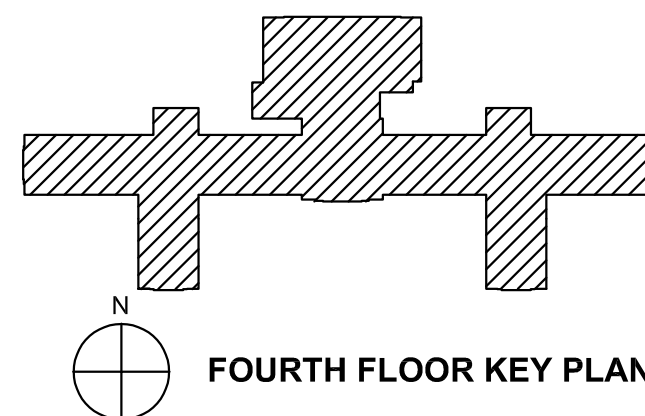


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-	1/25/22	DESIGN DEVELOPMENT



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- 1 REMOVE STEAM SUPPLY AND CONDENSATE RISERS DOWN TO THIRD FLOOR. SEE MD3.30 FOR CONTINUATION.
- 2 REMOVE STEAM SUPPLY AND CONDENSATE PIPING.
- 3 REMOVE STEAM RISER UP 5TH FLOOR MECHANICAL ROOM.



REV	DATE	DESCRIPTION
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-	12/16/22	CONSTRUCTION DOCUMENTS



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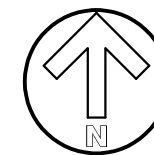
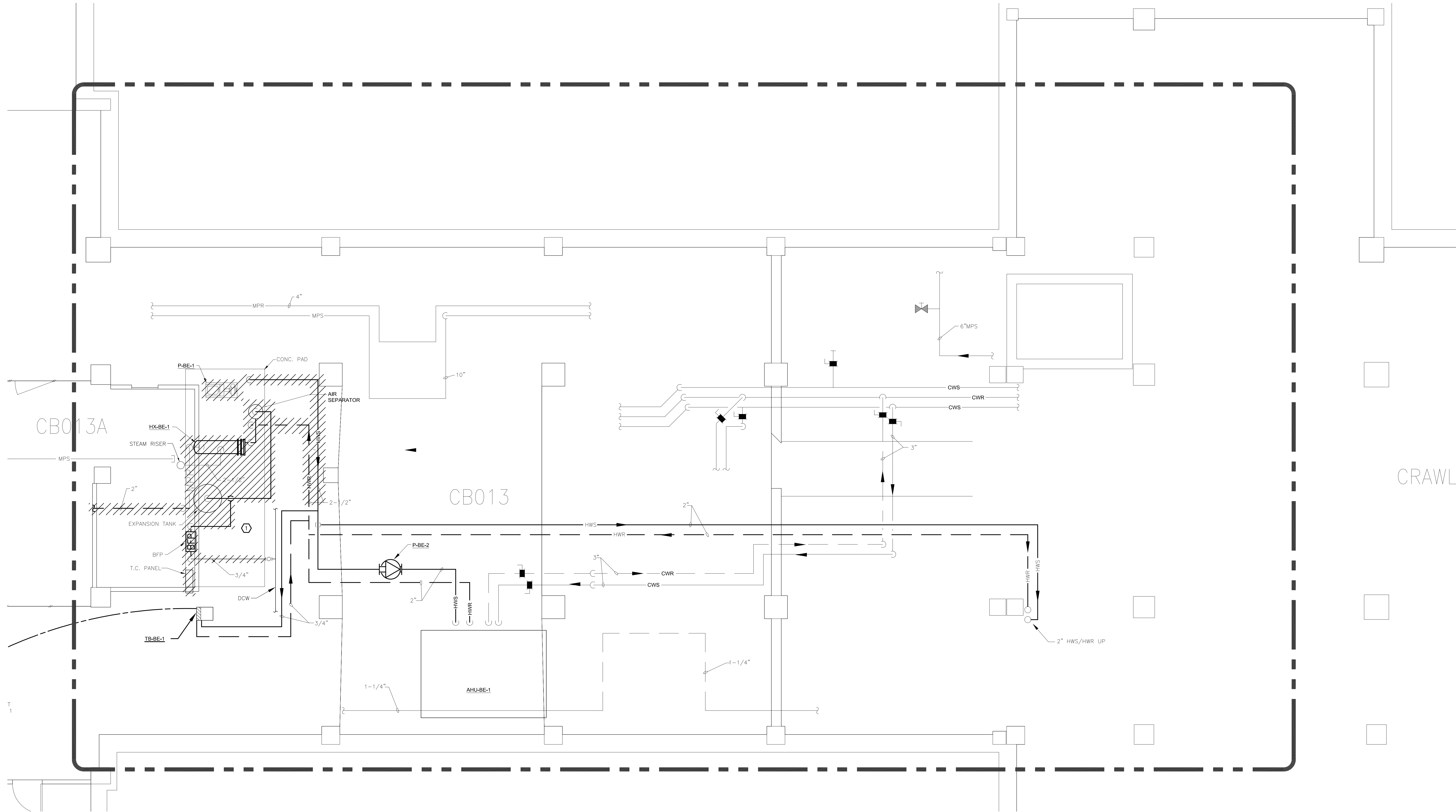
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- 1 REMOVE HEAT EXCHANGER, PUMPS AND ASSOCIATED STEAM PIPING. CAP STEAM PIPING AT MAINS. REMOVE HWS/R FROM HX TO MAINS. CAP HWS/R AT MAINS. REMOVE CONTROLS AND ASSOCIATED WIRING BACK TO CONTROL PANEL.
- 2 REMOVE STEAM PIPING SERVING SANITIZER AND REMOVE SANITIZER ON 4TH FLOOR BELOW. COORDINATE WITH CAMPUS REPRESENTATIVE.



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Save Date 9-Dec-22 by:mls
Plotted on 12/16/2022



BASEMENT FLOOR ENLARGED EAST PIPING DEMOLITION PLAN

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

SHEET NOTES

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4. STEAM PIPING LIKELY NEEDS ABATEMENT ON ITS INSULATION. COORDINATE WITH OWNER.
5. INVENTORY ALL EXISTING CONTROLLERS TO BE REMOVED AND PROVIDE LIST TO OWNER AND ENGINEER TO DETERMINE IF ANY CONTROLLERS SHALL BE SALVAGED BY THE OWNER.

KEY NOTES

- ① REMOVE STEAM TO HEATING WATER HEAT EXCHANGER, PUMPS, PIPING, FITTINGS AND ASSOCIATED EQUIPMENT AS SHOWN. REMOVE DOMESTIC COLD WATER FEED WATER, STEAM AND CONDENSATE PIPING BACK TO MAINS AND CAP. REMOVE CONTROLS AND ASSOCIATED WIRING BACK TO CONTROL PANEL.

DATE: SEPTEMBER 12, 2022

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

DESIGN BY: BUE

DRAWN BY: BUE

APPROVED BY: MLS

PRL NO. 2007

FITZSIMONS BUILDING 500 HEATING UPGRADE MASTERPLAN

BASEMENT ENLARGED EAST
PIPING DEMOLITION PLAN



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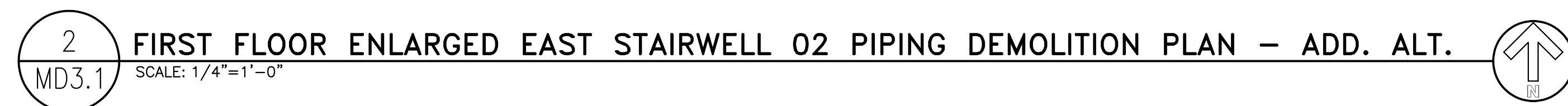


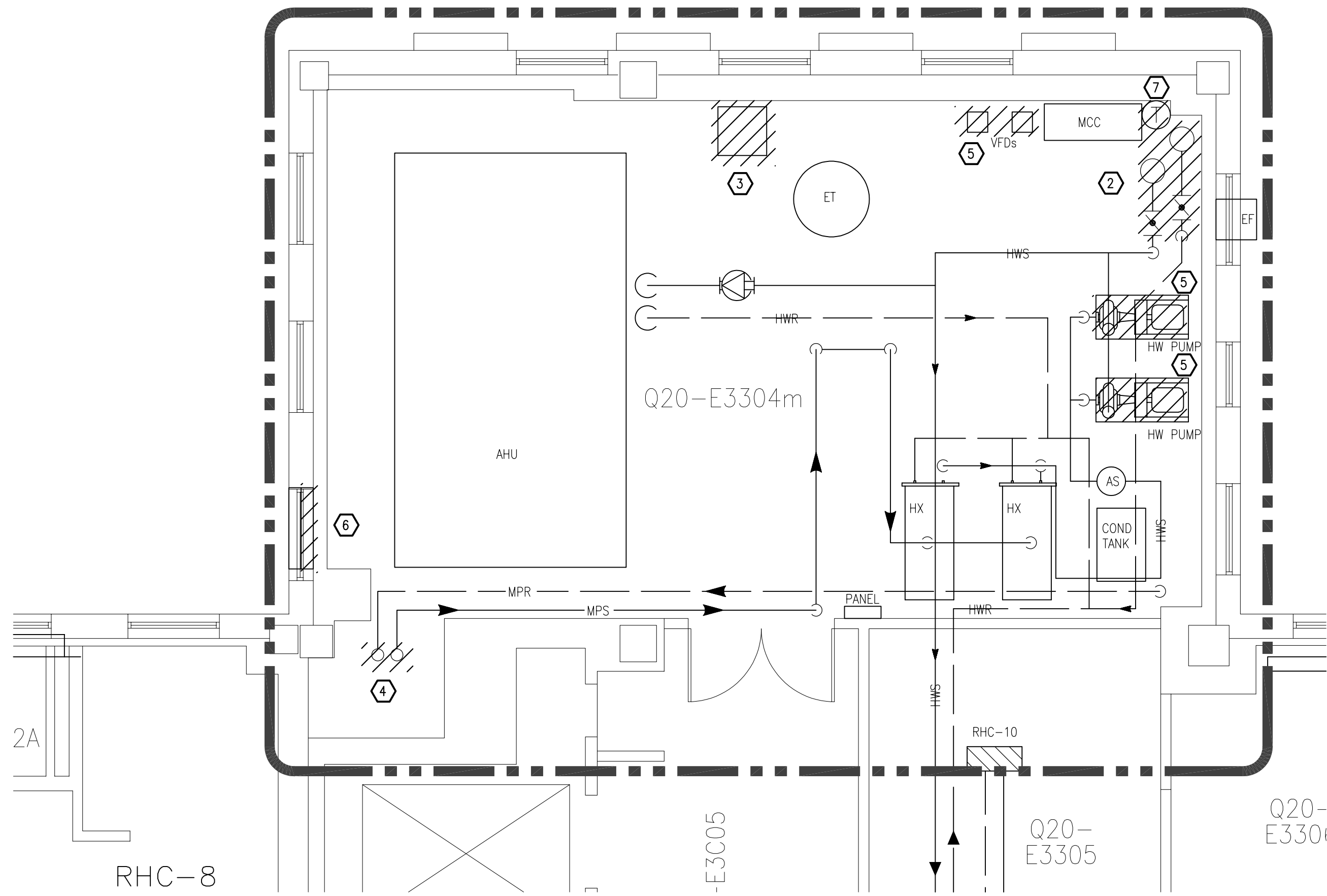
- ① REMOVE ANY ABANDONED PIPING IN CEILING SPACE IN HATCHED AREA.
- ② REMOVE STEAM CONVECTOR HEATING ELEMENT. CABINET TO REMAIN. REMOVE ASSOCIATED STEAM AND CONDENSATE PIPING AND FITTINGS BACK TO MAINS. CAP AT MAINS.
- ③ DISCONNECT STAIRWELL STEAM CONVECTOR AND ABANDON IN PLACE. REMOVE ITS ASSOCIATED PIPING AND FITTINGS BACK TO MAINS AND CAP.
- ④ REMOVE STEAM CONVECTOR HEATING ELEMENT AND CABINET COVER. CABINET TO REMAIN. REMOVE ASSOCIATED STEAM AND CONDENSATE PIPING AND FITTINGS BACK TO MAINS. CAP AT MAINS.



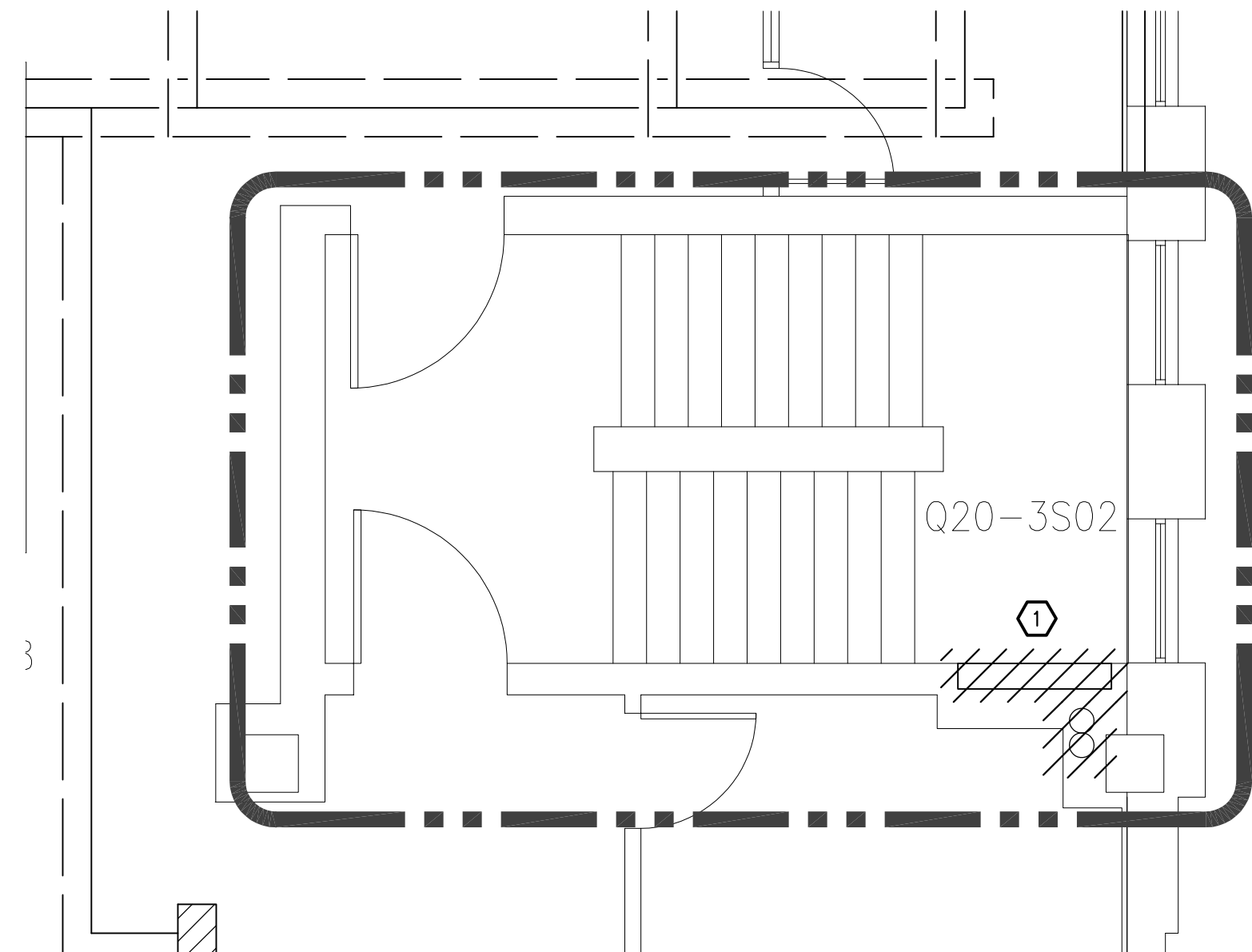
1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
3. EQUIPMENT AND PIPING SHOWN ON THIS DRAWING ARE BASED ON RECORD INFORMATION PROVIDED IN PART BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITION PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
4. STEAM PIPING LIKELY NEEDS ABATEMENT ON ITS INSULATION. COORDINATE WITH OWNER.
5. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TILE IN STAIRWELL.

- ① REMOVE 3" HWS/R RISER AND PIPING AS SHOWN. CAP REMAINING PIPING.
- ② REMOVE 3" HWS/R PIPING AS SHOWN. CAP REMAINING PIPING.
- ③ STAIRWELL AT THIS LEVEL SHOWN FOR REFERENCE. NO DEMO WORK.

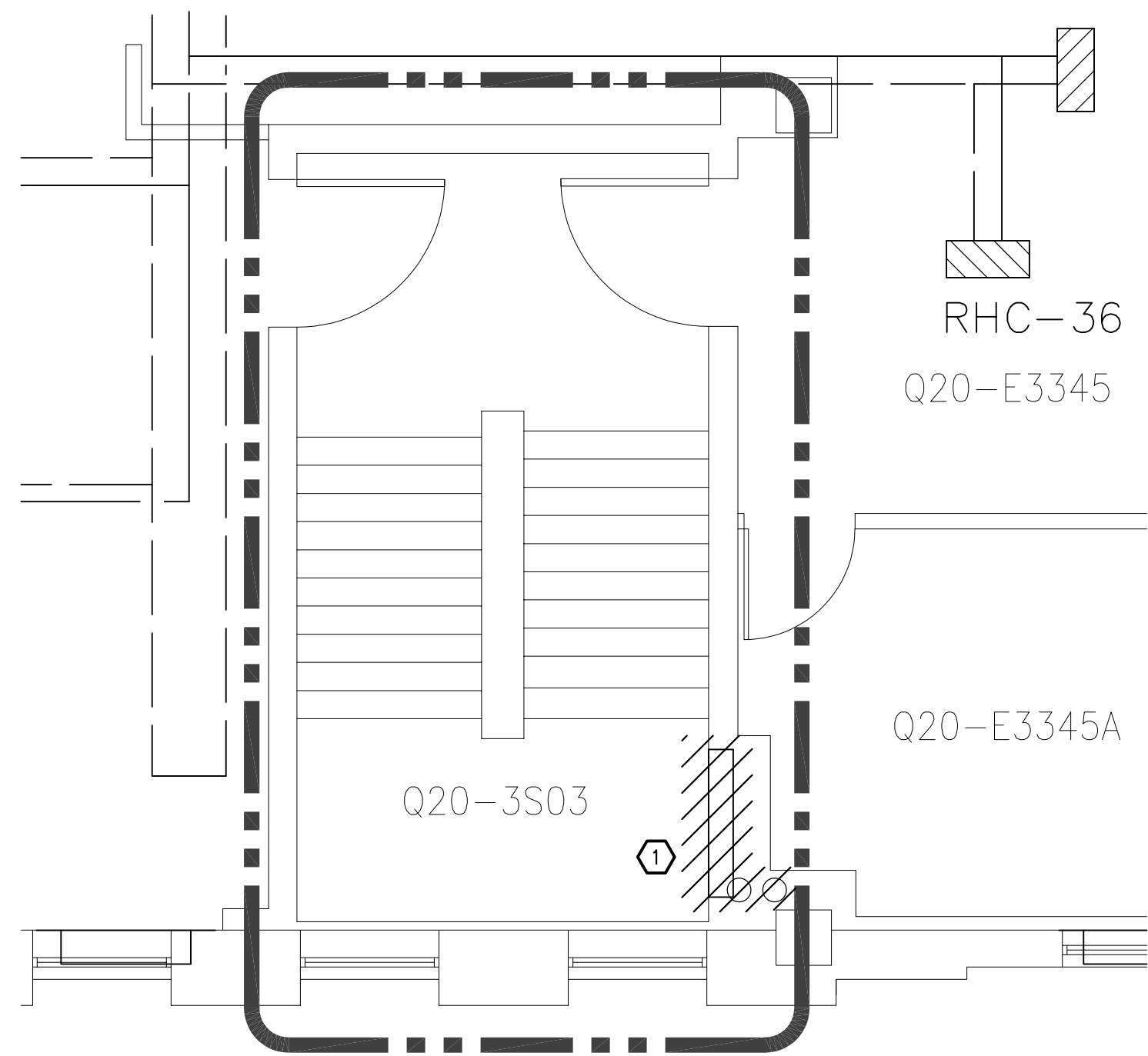




1 THIRD FLOOR ENLARGED EAST MECHANICAL ROOM AREA PIPING DEMOLITION PLAN
MD3.3 SCALE: 1/4"=1'-0"



2 THIRD FLOOR ENLARGED EAST STAIRWELL 02 PIPING DEMOLITION PLAN - ADD. ALT.
MD3.3 SCALE: 1/4"=1'-0"



3 THIRD FLOOR ENLARGED SOUTHEAST STAIRWELL 03 PIPING DEMOLITION PLAN - ADD. ALT.
MD3.3 SCALE: 1/4"=1'-0"

SHEET NOTES

1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
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4. STEAM PIPING LIKELY NEEDS ABATEMENT ON ITS INSULATION. COORDINATE WITH OWNER.
5. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TILE IN STAIRWELL.

KEY NOTES

- 1 DISCONNECT STAIRWELL STEAM CONNECTOR AND ABANDON IN PLACE. REMOVE ITS ASSOCIATED PIPING AND FITTINGS BACK TO MAINS AND CAP.
- 2 REMOVE 4" HORIZONTAL HWS/R PIPING DOWNSTREAM OF 6" HWS/R, AND 3" HWS/R VERTICAL ABOVE TEE AND 4" HWS/R BELOW HWS/R TO ACCOMMODATE NEW WORK. SEE M3.3.
- 3 REMOVE EXISTING GLYCOL FEEDER FOR REPLACEMENT WITH NEW FEEDER. SEE M3.3 FOR MORE INFORMATION.
- 4 REMOVED STEAM CONDENSATE AND RETURN UP TO FOURTH FLOOR ABOVE. SEE MD3.4 FOR CONTINUATION. CAP REMAINING PIPING ABOVE BRANCH PIPING SERVING THIS FLOOR.
- 5 REMOVE 15 HP PUMP, AND THEIR VFDs. RE: ELECTRICAL DRAWINGS, PADS AND ISOLATION PADS TO REMAIN.
- 6 REMOVE SUPPLY DAMPER ON WEST WALL. LOUVER TO REMAIN.
- 7 REMOVE THERMOSTAT FOR EXHAUST FAN ON EAST WALL.

DATE: SEPTEMBER 12, 2022	REVISION
SCALE: 1/4"=1'-0"	
DESIGN BY: BUE	
DRAWN BY: BUE	
APPROVED BY: MLS	
PRJ. NO. 20607	

FITZSIMONS BUILDING 500 HEATING UPGRADE MASTERPLAN

THIRD FLOOR ENLARGED
PIPING DEMOLITION PLANS



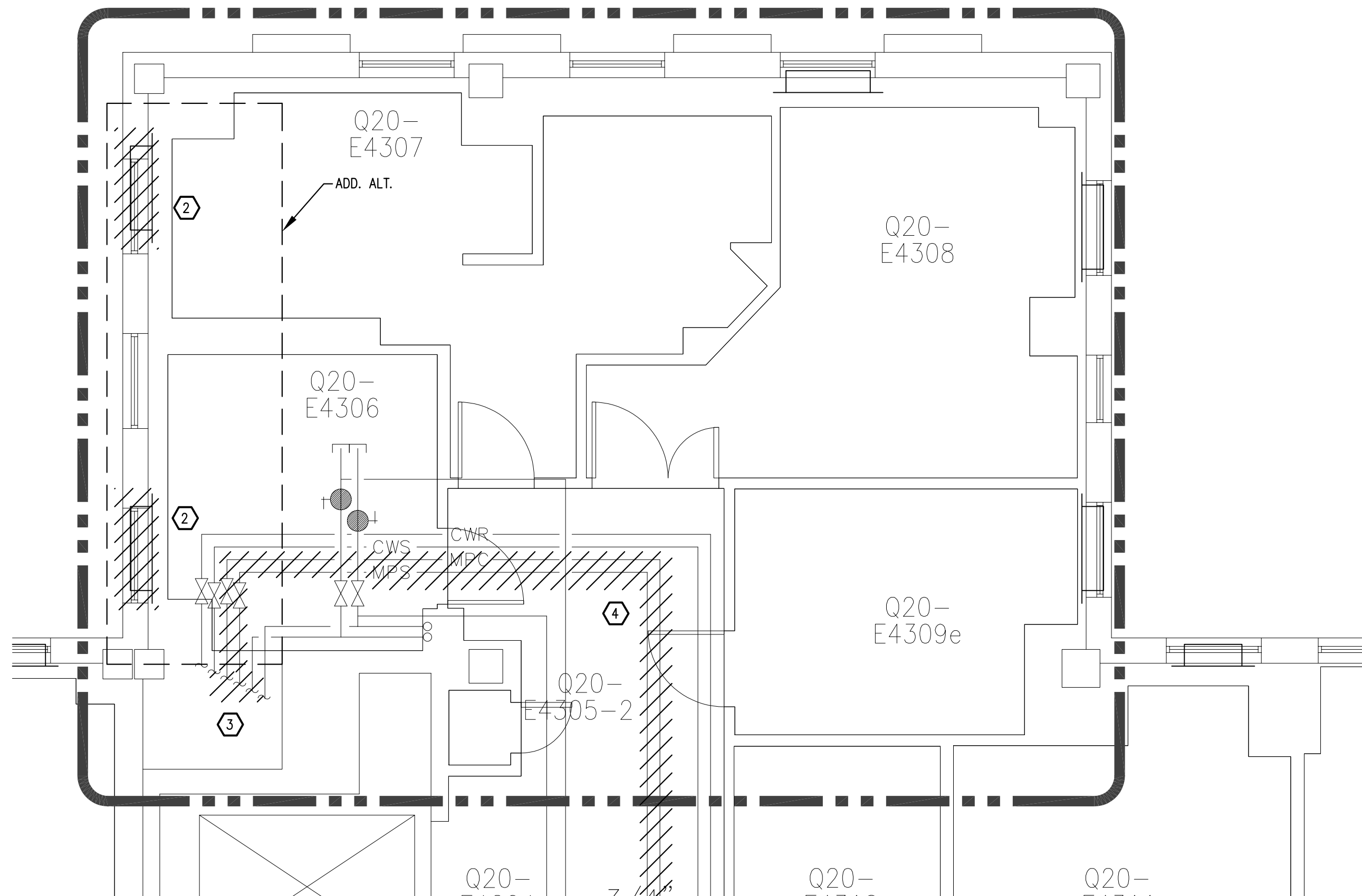
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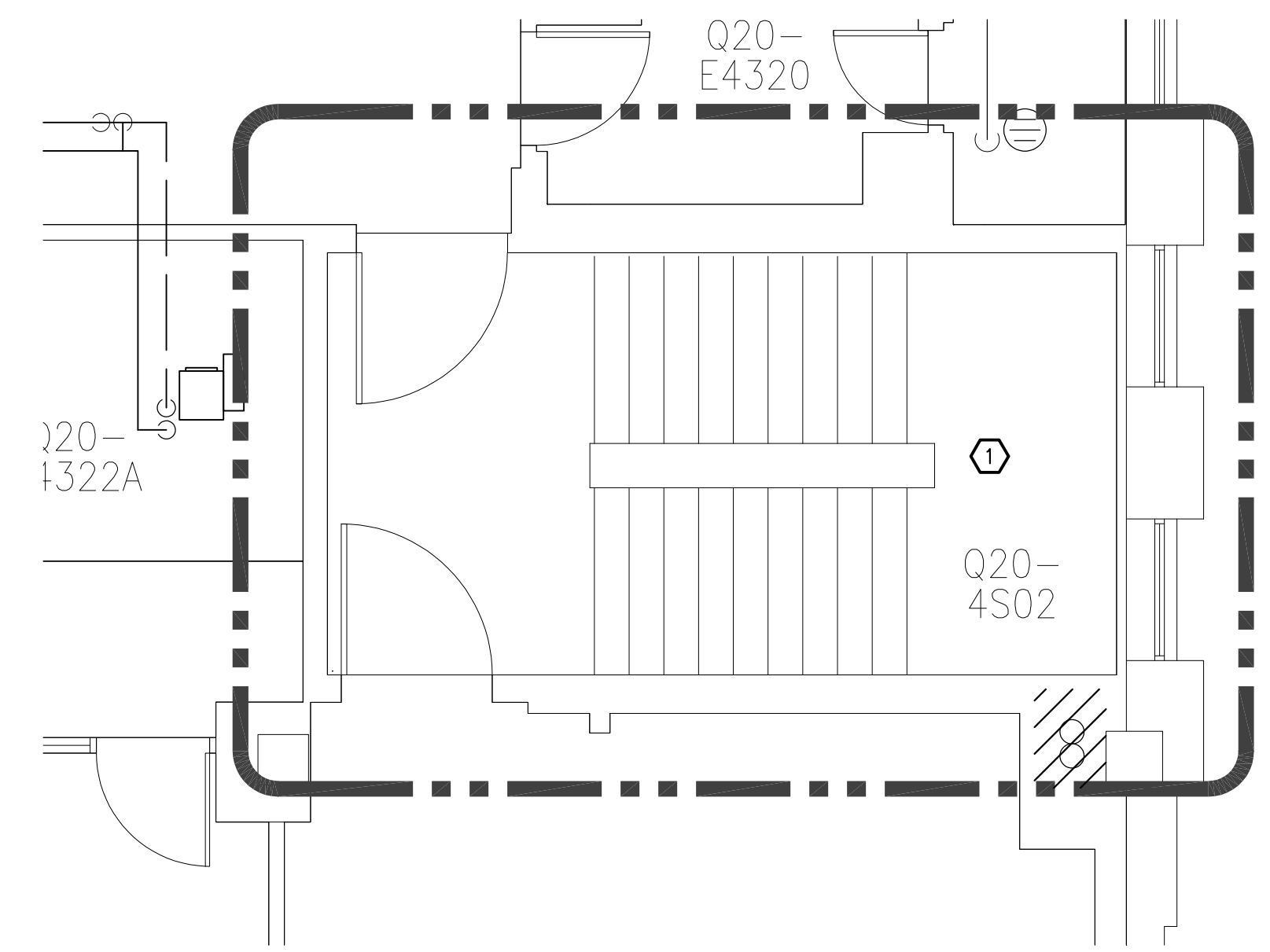
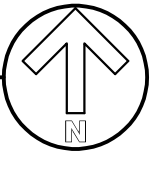
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Save Date 9-Dec-22 by: bnf
Plotted on 12/16/2022



1
MD3.4

FOURTH FLOOR ENLARGED E4306 & E4307 PIPING DEMOLITION PLAN

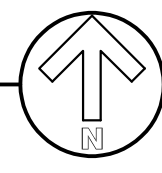
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2
MD3.4

FOURTH FLOOR ENLARGED EAST STAIRWELL 02 PIPING DEMOLITION PLAN - ADD. ALT.

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



SHEET NOTES

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2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
3. EQUIPMENT AND PIPING SHOWN ON THIS DRAWING ARE BASED ON RECORD INFORMATION PROVIDED IN PART BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITION PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
4. STEAM PIPING LIKELY NEEDS ABATEMENT ON ITS INSULATION. COORDINATE WITH OWNER.
5. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TILE IN STAIRWELL.

KEY NOTES

- ① NO WORK IN THIS AREA. STAIRWELL SHOWN FOR REFERENCE.
- ② REMOVE RESTROOM STEAM CONNECTOR.
- ③ REMOVE STEAM SUPPLY AND CONDENSATE RISERS DOWN TO THIRD FLOOR. SEE MD3.3 FOR CONTINUATION.
- ④ REMOVE STEAM SUPPLY AND CONDENSATE PIPING.

DATE: SEPTEMBER 12, 2022

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

DESIGN BY: BNF

DRAWN BY: BNF

APPROVED BY: MLS

PRL NO. 20607

FITZSIMONS BUILDING 500 HEATING UPGRADE MASTERPLAN

FOURTH FLOOR ENLARGED PIPING DEMOLITION PLANS

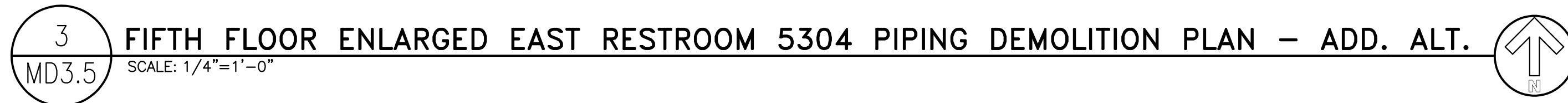
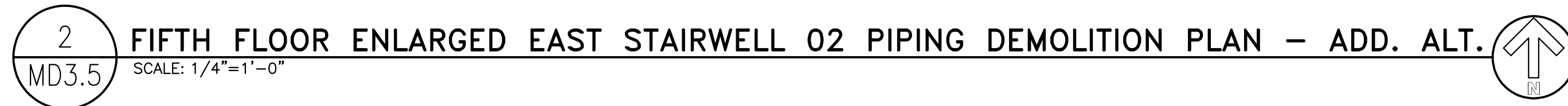


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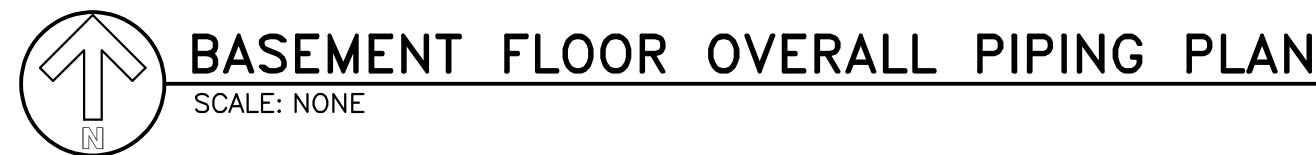


- ① REMOVE HEAT EXCHANGER, PUMPS, AND ASSOCIATED PIPING, FITTINGS AND ACCESSORIES AS SHOWN. REMOVE CONTROLS AND ASSOCIATED WIRING BACK TO CONTROL PANEL.
- ② REMOVE STEAM PIPING BACK AND VALVES AS SHOWN.
- ③ REMOVE STEAM CONDENSATE PIPE HEATING ELEMENT. CABINET TO REMAIN. REMOVE ASSOCIATED STEAM AND CONDENSATE PIPING AND FITTINGS BACK TO MAINS. CAP AT MAINS.
- ④ REMOVE STEAM PIPING SERVING SANITIZER AND REMOVE SANITIZER ON 4TH FLOOR BELOW. COORDINATE WITH CAMPUS REPRESENTATIVE.
- ⑤ DISCONNECT STAINLESS STEAM CONDENSATE AND ABANDON IN PLACE. REMOVE ITS ASSOCIATED PIPING AND FITTINGS BACK TO MAINS AND CAP.

DATE: SEPTEMBER 12, 2022	 University of Colorado Anschutz Medical Campus	RMH GROUP engineering a greener future™ Mechanical and Electrical Engineering Energy Consulting Sustainable Design	12600 West Colfax Ave Lakewood, CO 80215 Phone 303-238-0909 Fax 303-235-0218 www.rmhgroup.com © 2019	 16/12/2022	REV.	DATE	DESCRIPTION
MD3.5					–	12/16/22	CONSTRUCTION DOCUMENTS
					–	1/25/22	DESIGN DEVELOPMENT

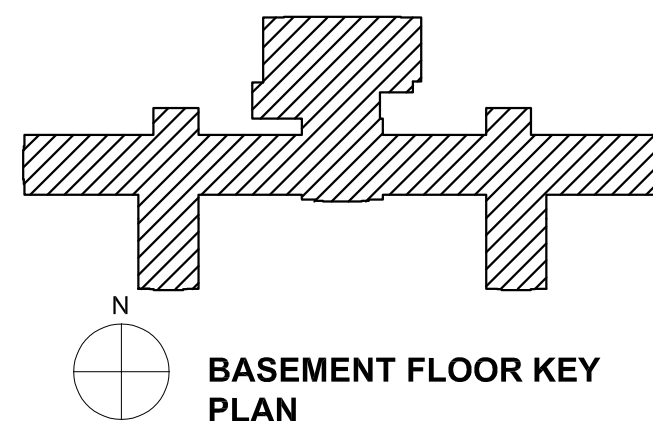
- 1 REMOVE EXISTING HEATING WATER PIPING, STEAM PIPING AND HEAT EXCHANGERS AS SHOWN.
- 2 REMOVE STEAM PIPING SERVING HEAT EXCHANGER BACK TO EXISTING SHUTOFF VALVE.



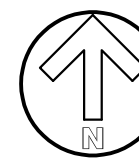


1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
3. EQUIPMENT AND PIPING SHOWN ON THIS DRAWING ARE BASED ON RECORD INFORMATION PROVIDED IN PART BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITION PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
4. NEW HWS/R PIPING SERVING STAIRWELLS IS SHOWN AT INTENDED INSTALLATION LOCATIONS. REPORT FINDINGS AND DISCREPANCIES TO ENGINEER.

- ① CONNECT TO EXISTING 2-1/2" HWS/R SERVING GROUND EAST, VAV AND AIR HANDLING UNIT.
- ② 6 FT. L X 3.5' W MIN. EXPANSION LOOP. ANCHOR AT BEGINNING AT CONNECTION TO EXISTING AND AT RISERS.



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1	12/16/22	CONSTRUCTION DOCUMENTS
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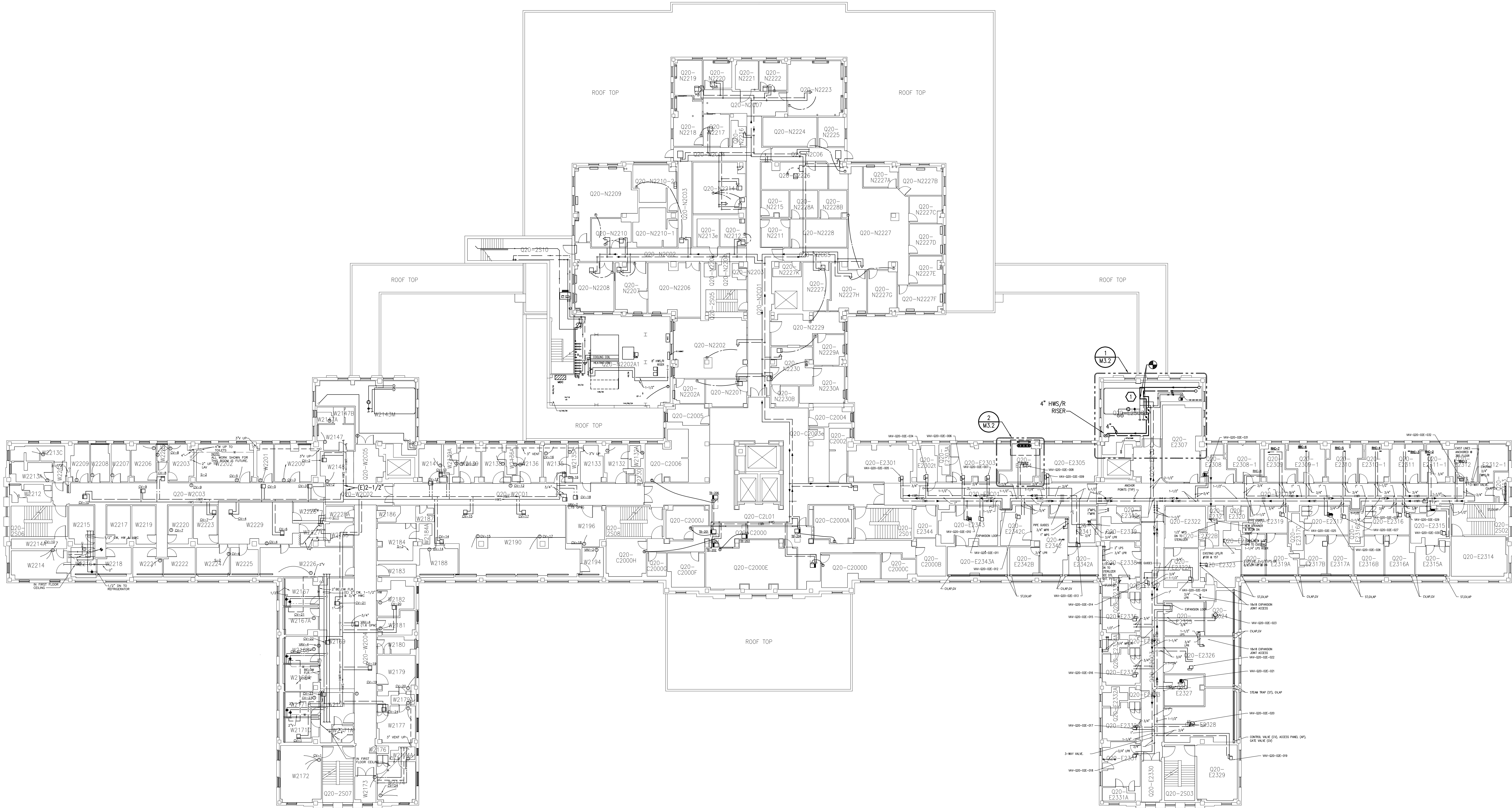
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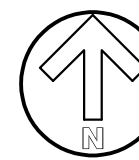
1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
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1 EXTEND AND CONNECT NEW VALVED 3" HWS/R PIPING TO EXISTING HWS/R.



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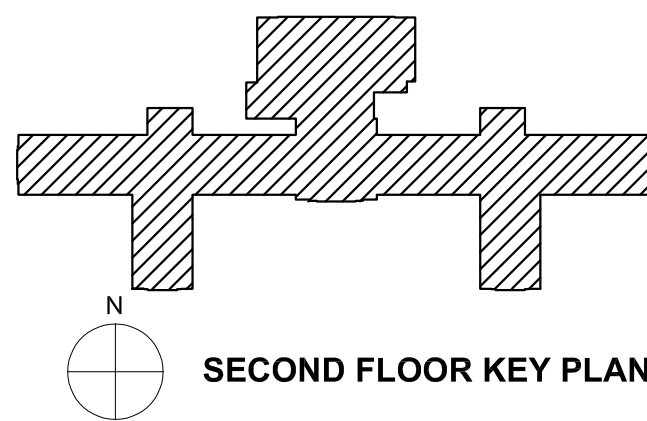
 **SECOND FLOOR OVERALL PIPING PLAN**
SCALE: NONE

SHEET NOTES

1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
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KEY NOTES

-  CONNECT NEW 4" HWS/R TO EXISTING 4" HWS/R.



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HEATING UPGRADE MASTERPLAN
SECOND FLOOR OVERALL
PIPING PLAN



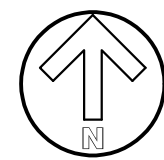
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DRAWN BY: BJE		
APPROVED BY: MJS		
PRL NO. 20607		



THIRD FLOOR OVERALL PIPING PLAN

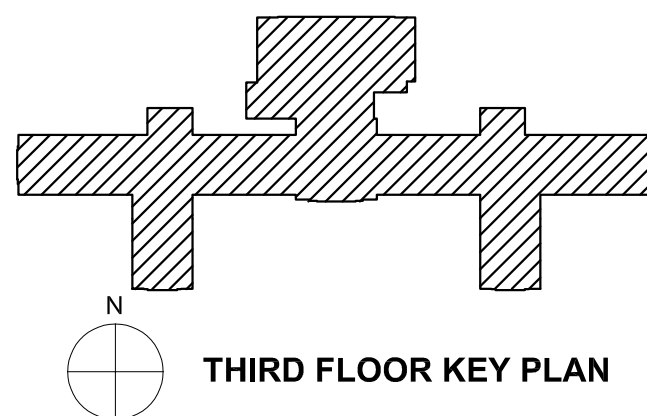
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SHEET NOTES

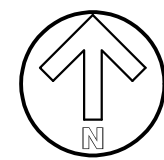
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KEY NOTES

- 1 CONNECT AND EXTEND NEW 4" HWS/R TO EXISTING 4" HWS/R VERTICAL VALVED STUB-OUTS.



THIRD FLOOR KEY PLAN

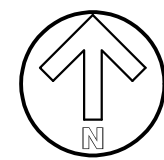


SCALE: NONE

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- 1 NEW HWS/R RISER. PROVIDE NEW CHASE.
- 2 FIELD ROUTE NEW HWS/R PIPING. SOME SPACES ARE LIMITED. VERTICALLY STACK PIPE IF REQUIRED. NOT ALL OFFSETS ARE SHOWN ON PLAN. CONTRACTOR MAY PROPOSE ALTERNATE ROUTING, INCLUDING LOCATING NEW HWS/R PIPING IN SPACE WHERE STEAM SUPPLY AND CONDENSATE WAS REMOVED.
- 3 CONNECT TO 2-1/2" HWS/R UP TO AHU HEATING COIL PIPING IN 5TH FLOOR EAST PENTHOUSE ABOVE. SEE SHEET M3.50 FOR CONTINUATION.
- 4 CONNECT TO EXISTING 2-1/2" HWS/R SERVING FOURTH EAST.

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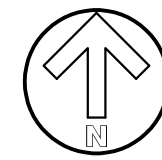
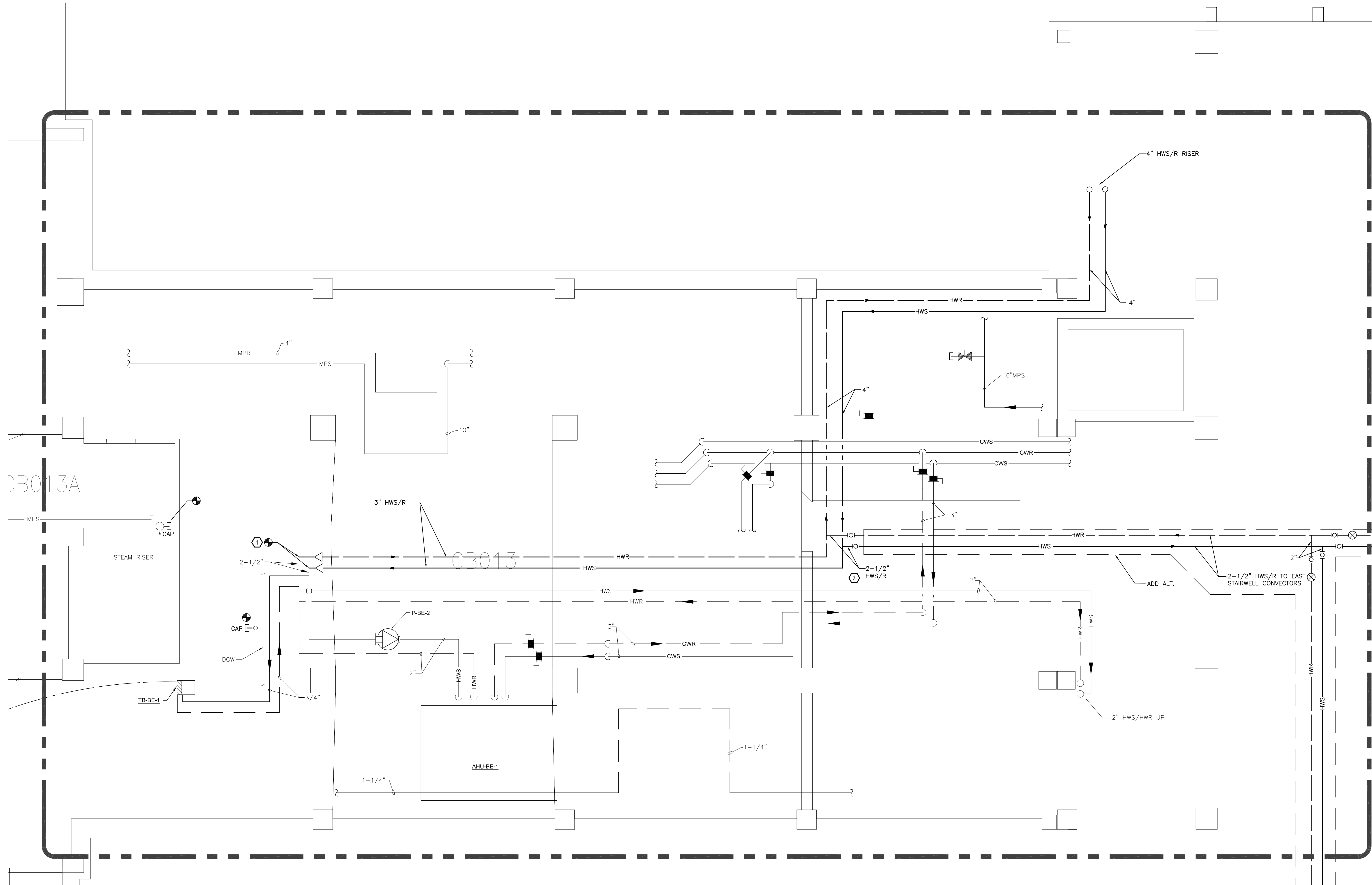


SCALE: NONE

FIFTH FLOOR KEY PLAN

FIFTH FLOOR KEY PLAN

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Save Date: 14-Dec-22 by: mla
Plotted on 12/16/2022



BASEMENT FLOOR ENLARGED EAST PIPING PLAN

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

SHEET NOTES

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KEY NOTES

- ① CONNECT TO EXISTING 2-1/2" HWS/R SERVING GROUND EAST, VAV AND AIR HANDLING UNIT.
- ② PROVIDE 2-1/2" VALVED AND CAPPED STUBOUTS. CONNECTED IN ADD. ALT.

DATE: SEPTEMBER 12, 2022

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

DESIGN BY: BUE

DRAWN BY: BUE

APPROVED BY: MLS

PRL NO. 20607

FITZSIMONS BUILDING 500 HEATING UPGRADE MASTERPLAN BASEMENT ENLARGED EAST PIPING PLAN



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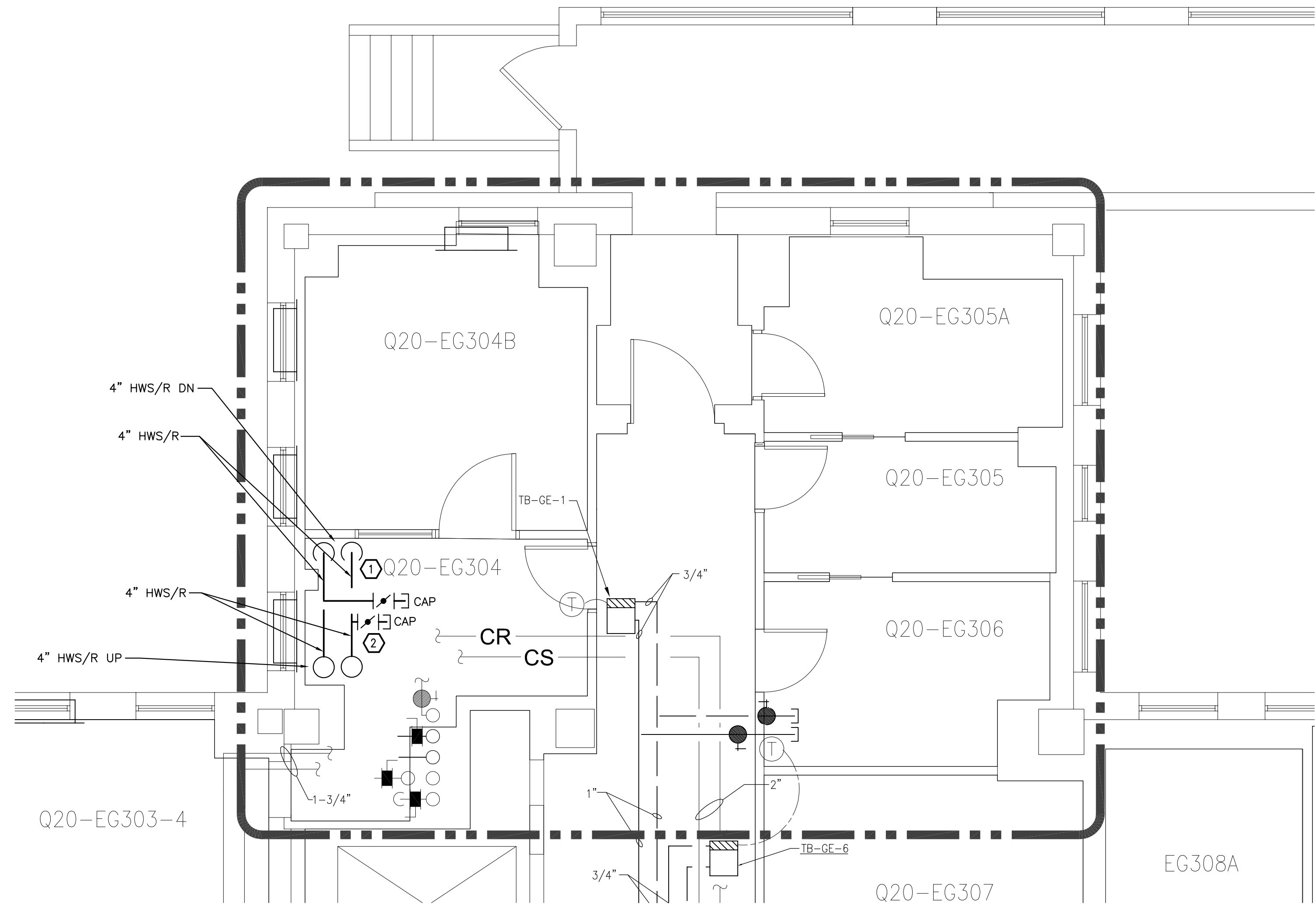
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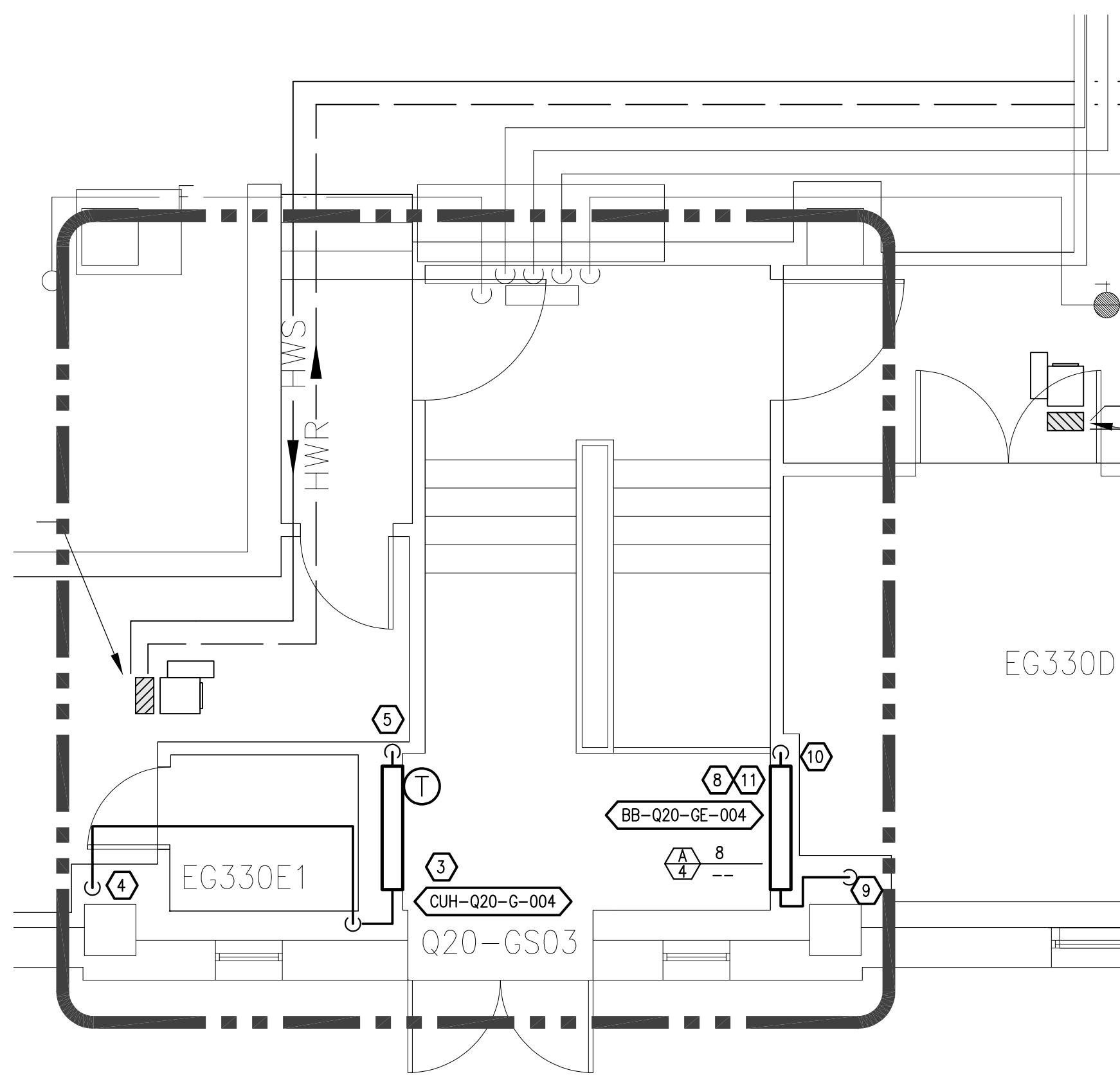


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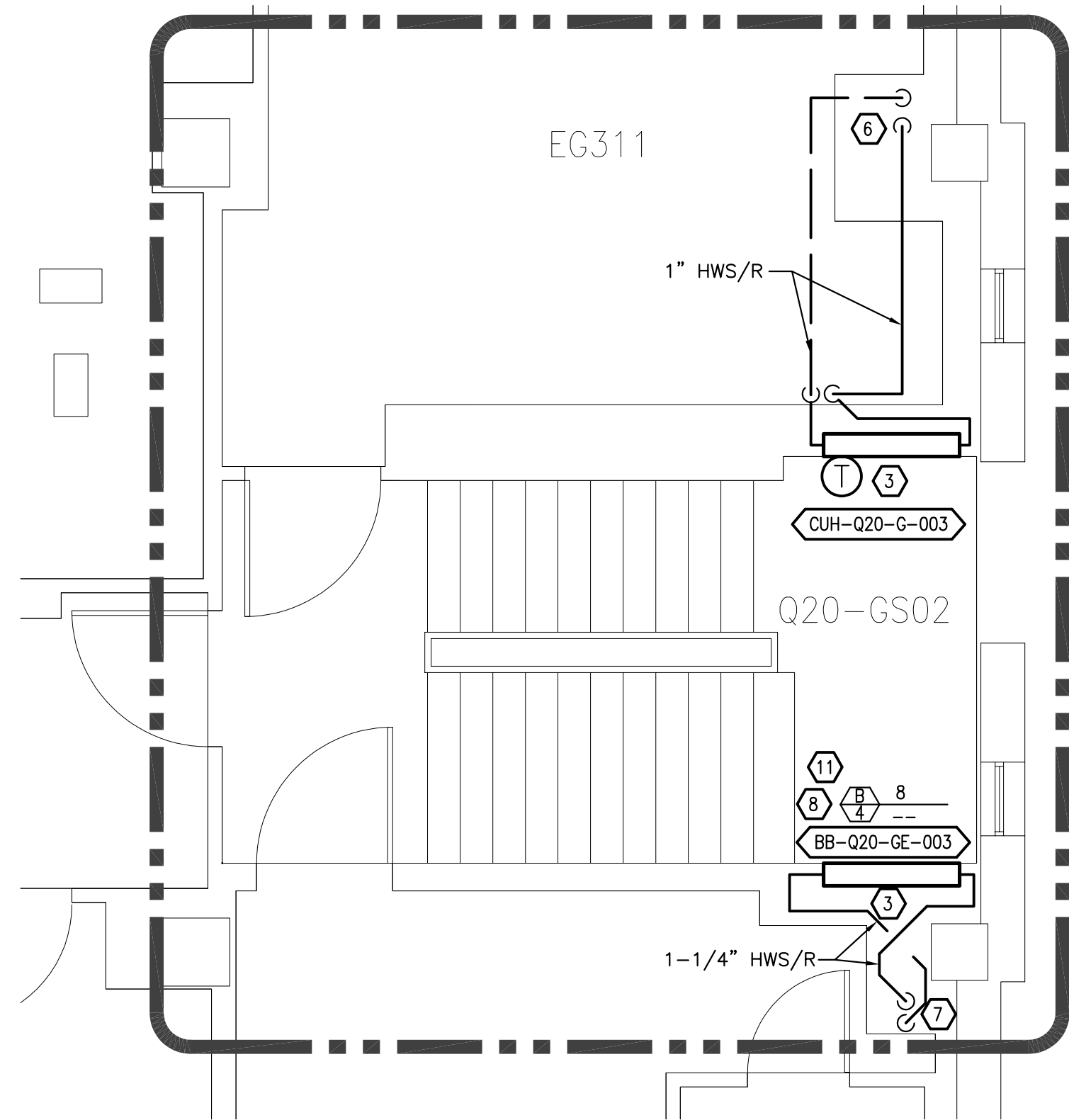
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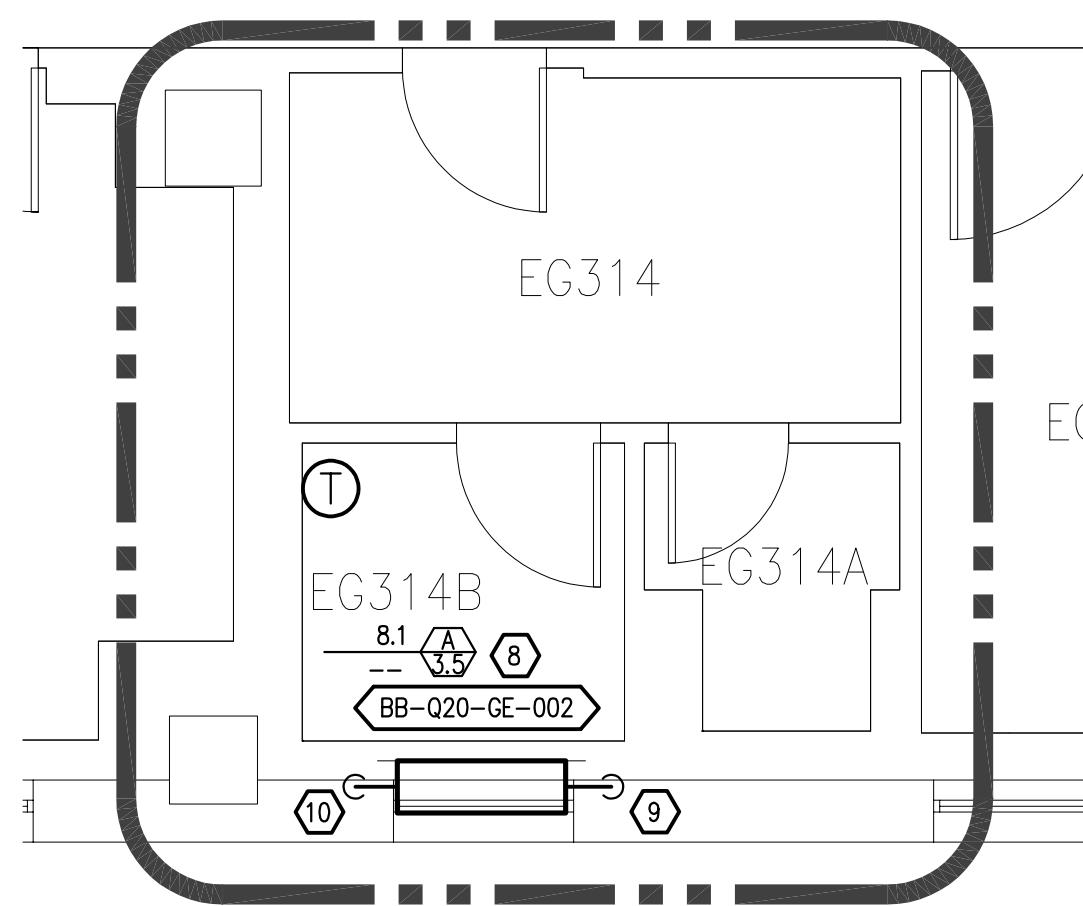
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M3.G
GROUND FLOOR ENLARGED EAST ROOM EG404 AREA PIPING PLAN
SCALE: 1/4"=1'-0"



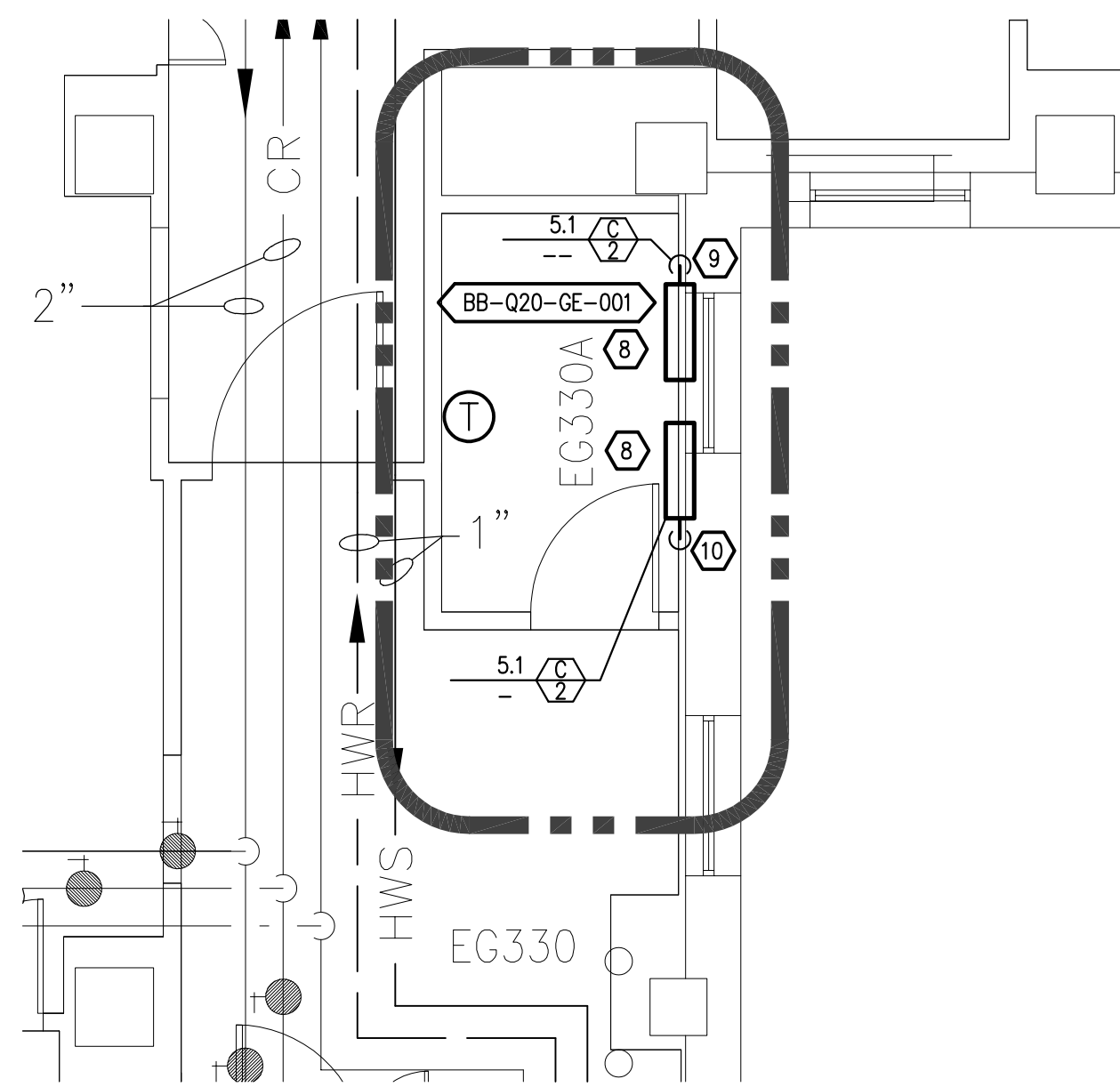
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M3.G
GROUND FLOOR ENLARGED SOUTHEAST STAIRWELL 03 PIPING PLAN - ADD. ALT.
SCALE: 1/4"=1'-0"



2
M3.G
GROUND FLOOR ENLARGED EAST STAIRWELL 02 PIPING PLAN - ADD. ALT.
SCALE: 1/4"=1'-0"



4
M3.G
GROUND FLOOR ENLARGED EAST RESTROOM EG314B PIPING DEMOLITION PLAN - ADD. ALT.
SCALE: 1/4"=1'-0"



5
M3.G
GROUND FLOOR ENLARGED EAST RESTROOM EG330A PIPING - ADD. ALT.
SCALE: 1/4"=1'-0"

SHEET NOTES

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4. FIELD VERIFY INNER CONNECTOR CABINET DIMENSIONS AFTER DEMOLITION AND BEFORE ORDERING NEW FIN TUBE. COORDINATE DISCREPANCIES WITH ENGINEER.
5. NEW HWS/R PIPING SERVING STAIRWELLS IS SHOWN AT INTENDED INSTALLATION LOCATIONS. REPORT FINDINGS AND DISCREPANCIES TO ENGINEER.
6. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TIE.
7. X-RAY ALL NEW FLOOR PENETRATIONS.
8. MODIFY FIRE SPRINKLER SYSTEM AS REQUIRED TO ACCOMMODATE NEW WORK.

KEY NOTES

- 1 NEW RISER WITH OFFSET/JOG.
- 2 PROVIDE 3" HWS/R CAPPED AND VALVED STUB-OUTS.
- 3 NEW HW RECESSED CABINET UNIT HEATER, INTEGRAL THERMOSTAT TO BE INTERLOCKED WITH ADJACENT GASKERBOARD. SEE SCHEDULE, M1.1 AND DETAIL 3, M4.1 FOR FURTHER INFORMATION. COORDINATE WITH ELECTRICAL FOR CONVENIENCE OUTLET, LOCATED IN RECESS SPACE BELOW HEATER.
- 4 NEW 1" HWS DN.
- 5 NEW 1" HWR DN.
- 6 NEW 1" HWS/R DN.
- 7 NEW 1-1/4" HWS/R DN.
- 8 NEW HW CONNECTOR. SEE SCHEDULE, M1.1 AND DETAIL 2, M4.1 FOR FURTHER INFORMATION.
- 9 NEW 1-1/4" HWS DN.
- 10 NEW 1-1/4" HWR DN.
- 11 PROVIDE 3-WAY VALVE FOR STAIRWELL CONNECTOR. SEE DETAIL 2, SHEET M4.1 FOR PIPING AND CONTROL INFORMATION.

FITZSIMONS BUILDING 500 HEATING UPGRADE MASTERPLAN GROUND ENLARGED PIPING PLANS

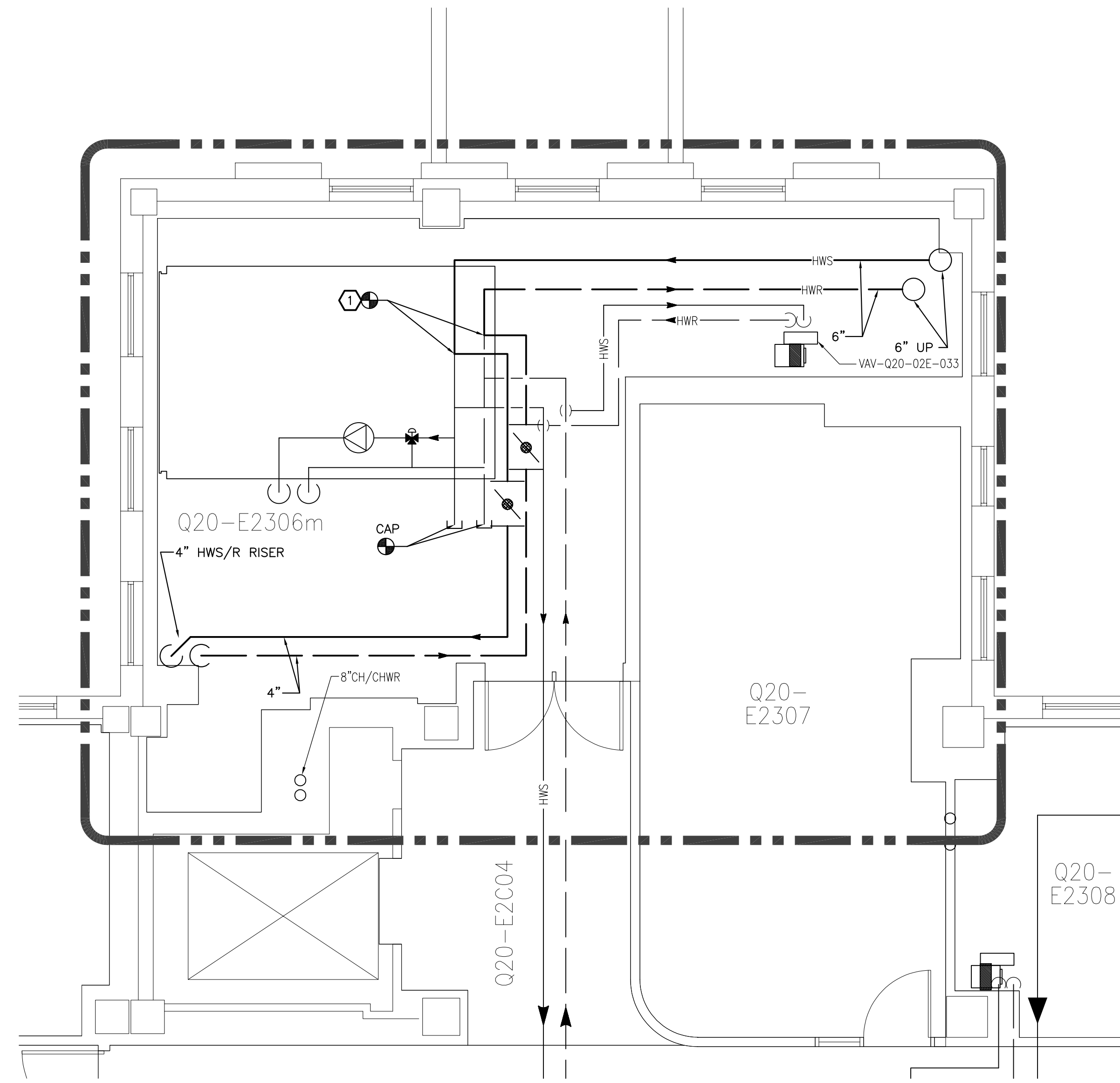
DATE: SEPTEMBER 12, 2022	SCALE: 1/4"=1'-0"
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APPROVED BY: MLS	FILE NO: 20607
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M3.G	1



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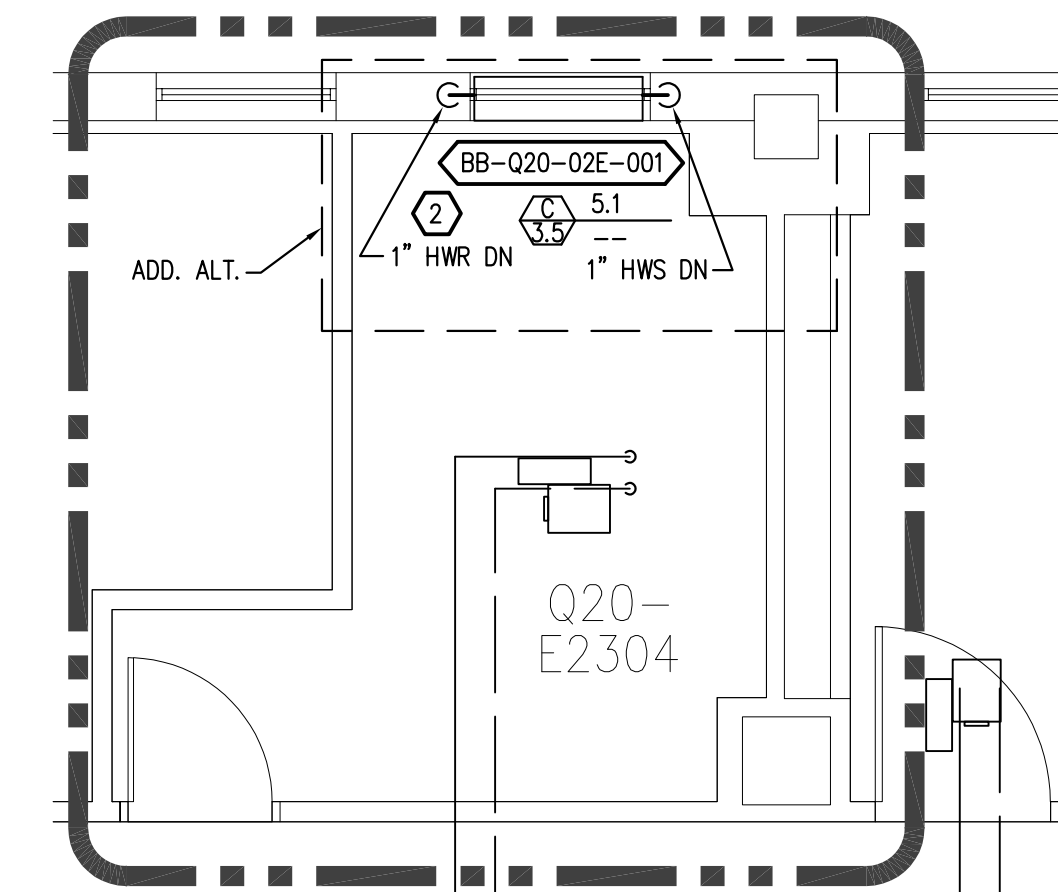
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1	12/16/22	CONSTRUCTION DOCUMENTS
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1
M3.2

SECOND FLOOR ENLARGED EAST MECHANICAL ROOM PIPING PLAN

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



SHEET NOTES

1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
3. EQUIPMENT AND PIPING SHOWN ON THIS DRAWING ARE BASED ON RECORD INFORMATION PROVIDED IN PART BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITION PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
4. FIELD VERIFY INNER CONNECTOR CABINET DIMENSIONS AFTER DEMOLITION AND BEFORE ORDERING NEW FIN TUBE. COORDINATE DISCREPANCIES WITH ENGINEER.
5. MODIFY FIRE SPRINKLER SYSTEM AS REQUIRED TO ACCOMMODATE NEW WORK.
6. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TILE.
7. X-RAY ALL NEW FLOOR PENETRATIONS.

KEY NOTES

- 1 CONNECT TO EXISTING 4" HWS/R SERVING SECOND FLOOR EAST.
- 2 NEW CONVECTOR. ADD. ALT. SEE SCHEDULE, M1.1 AND DETAIL 2, M4.1 FOR FURTHER INFORMATION.

DATE: SEPTEMBER 12, 2022

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

DESIGN BY: BJF

DRAWN BY: BJF

APPROVED BY: MLS	
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PRJ. NO: 20607

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M3.2

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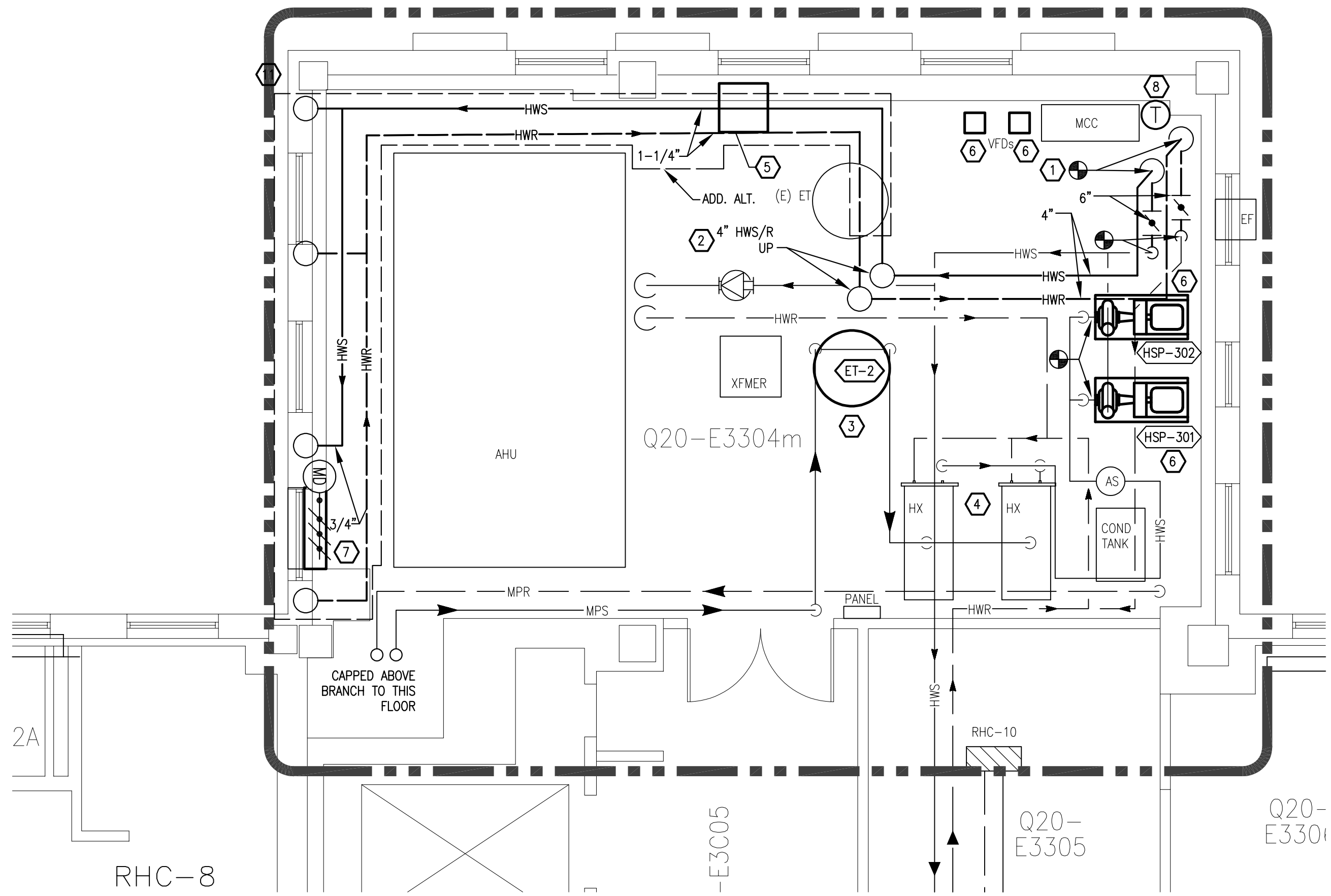


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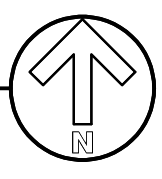
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1
M3.3

THIRD FLOOR ENLARGED EAST MECHANICAL ROOM AREA PIPING PLAN

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



SHEET NOTES

1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
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4. FIELD VERIFY INNER CONVECTOR CABINET DIMENSIONS AFTER DEMOLITION AND BEFORE ORDERING NEW FIN TUBE. COORDINATE DISCREPANCIES WITH ENGINEER.
5. MODIFY FIRE SPRINKLER SYSTEM AS REQUIRED TO ACCOMMODATE NEW WORK.
6. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TILE.
7. X-RAY ALL NEW FLOOR PENETRATIONS.

KEY NOTES

1. CONNECT AND EXTEND NEW 6" HWS/R FROM EXISTING 6" HWS/R, ALONG EAST WALL TO NEW VERTICAL 6" RISER DN AND PROVIDE NEW 4" HWS/R UP AS SHOWN. PROVIDE NEW 6" ISOLATION VALVES IN NEW HORIZONTAL SECTION (FORMERLY 4"). PROVIDE NEW 4" ISOLATION VALVES IN NEW VERTICAL SECTION (FORMERLY 3"). SEE M3.2 FOR PIPING CONTINUATION BELOW.
2. NEW 6" HWS/R RISER UP. SEE M3.4 FOR CONTINUATION.
3. NEW EXPANSION TANK. SEE EQUIPMENT SCHEDULES, M1.1. CHARGE EXISTING TANK TO MATCH NEW TANK CHARGE. DO NOT CLOSE SYSTEM AFTER FILLING UNTIL SYSTEM FLUID HAS REACHED ROOM TEMPERATURE (>60° F).
4. SEE CONTROLS DIAGRAM, SHEET M4.1 FOR HEAT EXCHANGER CONTROLS REFERENCE.
5. REPLACE GLYCOL FEEDER WITH ENGINEER APPROVED EQUIVALENT. SEE SPECIFICATION 23.25.00 FOR APPROVED MANUFACTURERS AND FURTHER INFORMATION. RECONNECT TO EXISTING PIPING AND USE EXISTING ADJACENT OUTLET FOR POWER.
6. PROVIDE NEW HEATING WATER PUMP AND VFD. RE: ELECTRICAL DRAWINGS AND MECHANICAL SCHEDULE. CONNECT TO EXISTING CONTROLS.
7. PROVIDE NEW MOTORIZED 40"x32" SUPPLY DAMPER AND INTERLOCK ITS OPERATION WITH EXISTING EXHAUST FAN. SEE DETAIL 6, SHEET M4.1.
8. PROVIDE NEW TEMPERATURE SENSOR FOR EXHAUST FAN ON EAST WALL.

DATE: SEPTEMBER 12, 2022

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

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DRAWN BY: BUE

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FITZSIMONS BUILDING 500
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THIRD FLOOR ENLARGED
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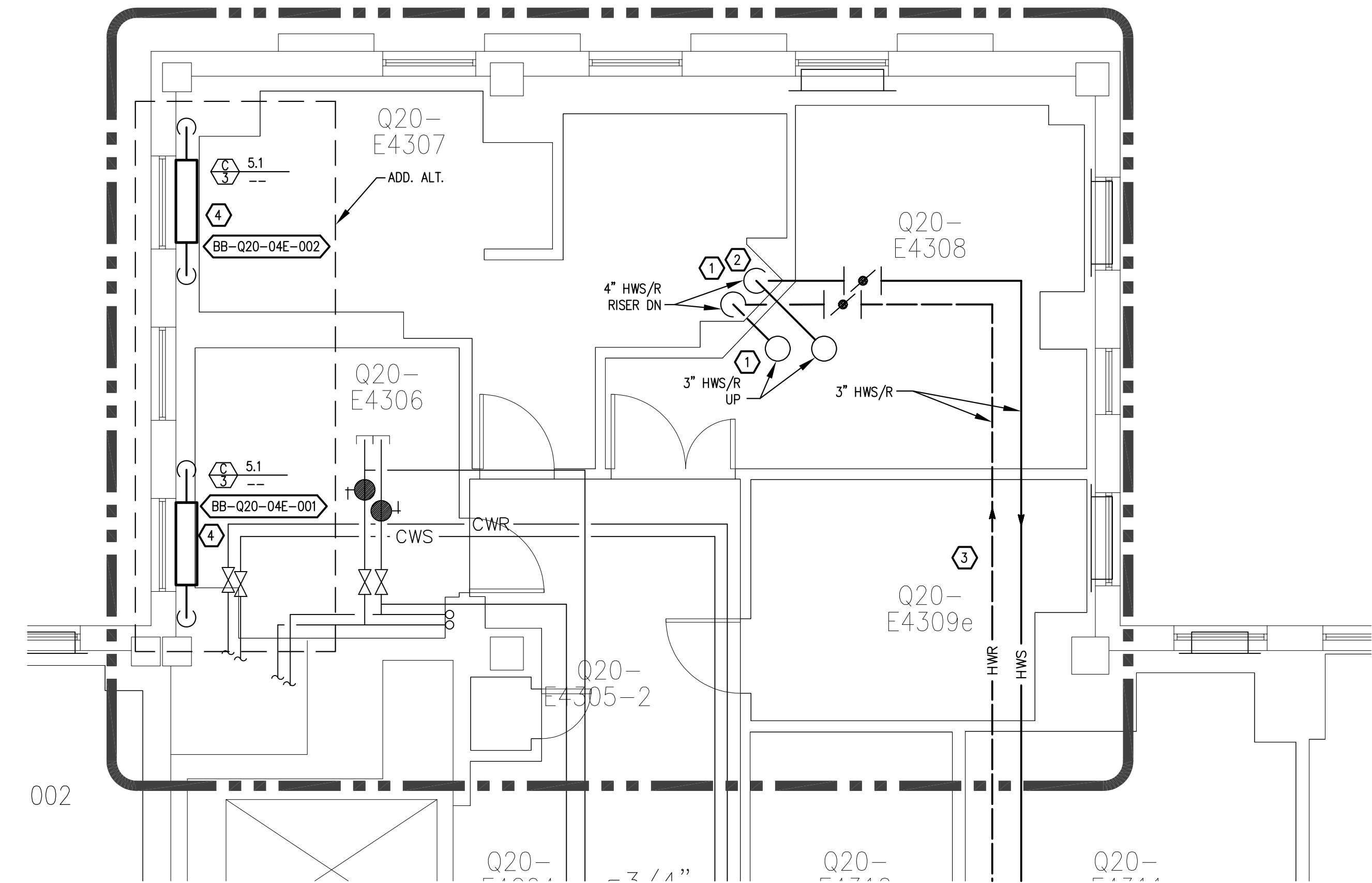
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1
M3.4
FOURTH FLOOR ENLARGED EAST E4306, E4307, 4308 & E4309e PIPING PLAN
SCALE: 1/4"=1'-0"

SHEET NOTES

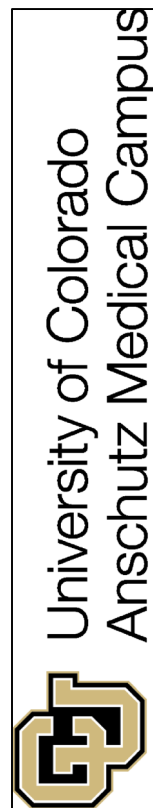
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4. FIELD VERIFY INNER CONVECTOR CABINET DIMENSIONS AFTER DEMOLITION AND BEFORE ORDERING NEW FIN TUBE. COORDINATE DISCREPANCIES WITH ENGINEER.
5. MODIFY FIRE SPRINKLER SYSTEM AS REQUIRED TO ACCOMMODATE NEW WORK.
6. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TILE.
7. X-RAY ALL NEW FLOOR PENETRATIONS.

KEY NOTES

- ① NEW HWS/R RISER. 4" DN AND 3" UP.
- ② PROVIDE NEW CHASE ENCLOSURE FOR NEW RISER. PAINT AND FINISH TO MATCH EXISTING WALLS. SEE DETAIL 5, M4.1.
- ③ ENCLOSE NEW HWS/R PIPING IN SOFFIT THROUGH ELECTRICAL ROOM. SEE DETAIL 4, M4.1. CONTRACTOR MAY PROPOSE ALTERNATE ROUTING, INCLUDING LOCATING NEW HWS/R PIPING IN SPACE WHERE STEAM SUPPLY AND CONDENSATE WAS REMOVED.
- ④ NEW HWS/R AND CONVECTOR IN EXISTING CABINETS. SEE SCHEDULE, M1.1 AND DETAIL 2, M4.1 FOR FURTHER INFORMATION.

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FITZSIMONS BUILDING 500 HEATING UPGRADE MASTERPLAN FOURTH FLOOR ENLARGED PIPING PLANS



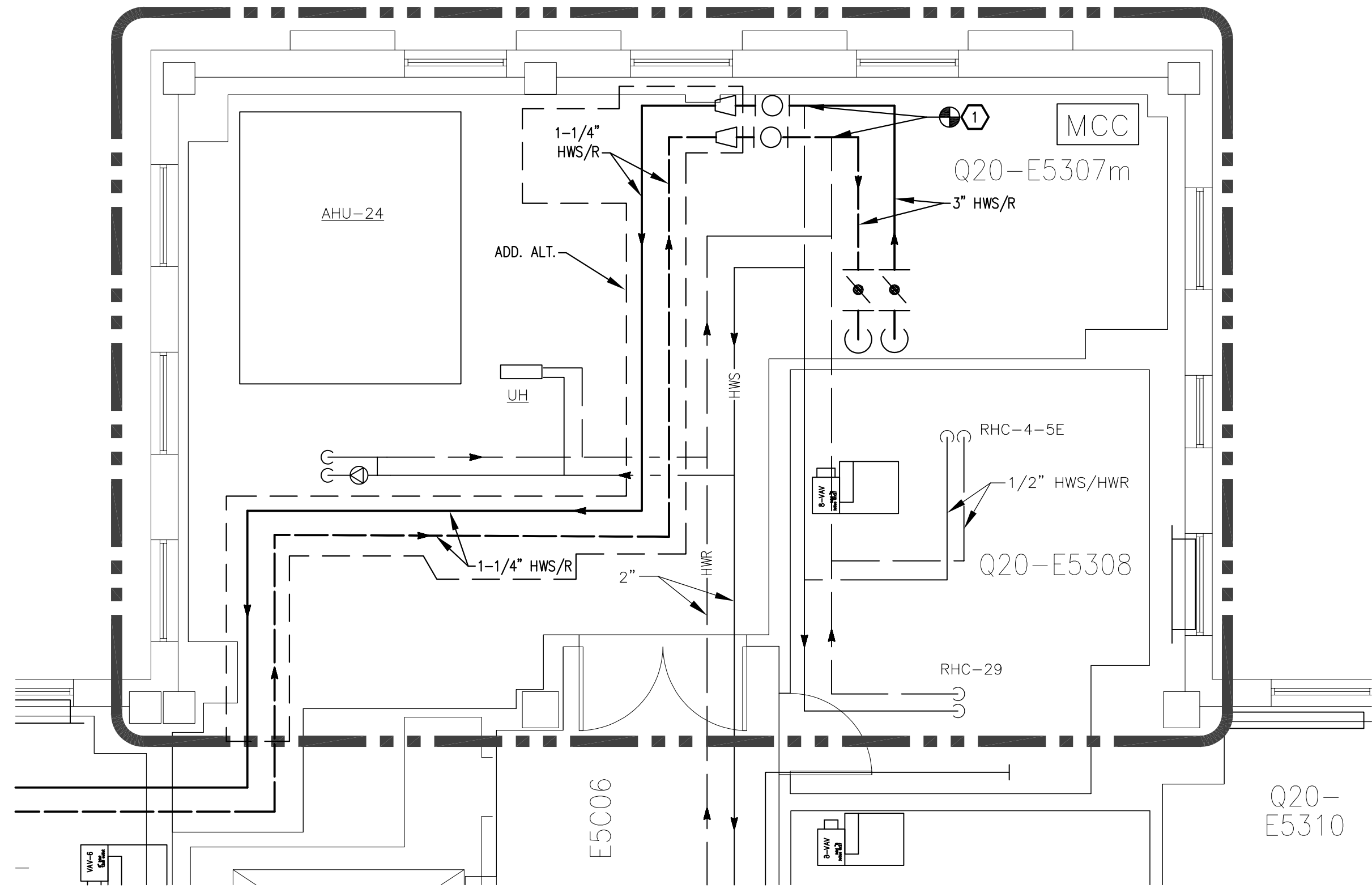
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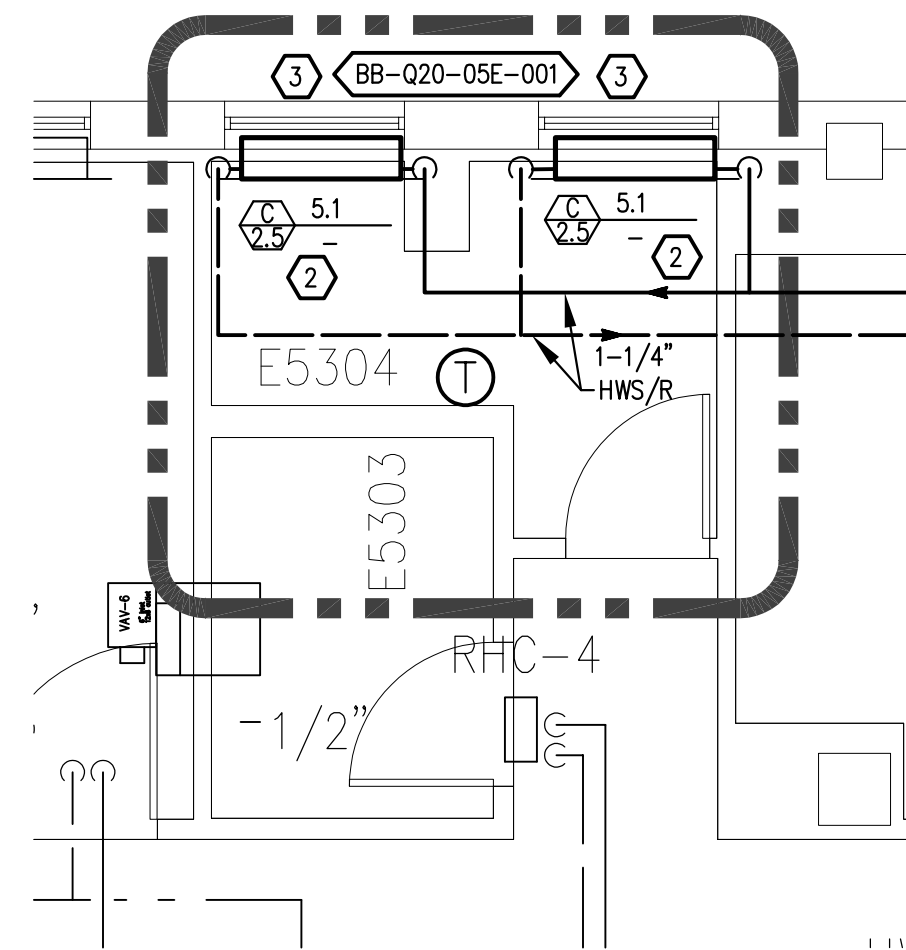
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1
M3.5
FIFTH FLOOR ENLARGED EAST MECHANICAL ROOM PIPING PLAN
SCALE: 1/4"=1'-0"



2
M3.5
FIFTH FLOOR ENLARGED EAST RESTROOM E5304 PIPING PLAN - ADD. ALT.
SCALE: 1/4"=1'-0"

SHEET NOTES

1. LIGHT LINE WEIGHT INDICATES EXISTING. HEAVY LINE WEIGHT INDICATES NEW CONSTRUCTION.
2. REPAIR ALL SURFACES AND FINISHES DAMAGED DUE TO DEMOLITION OR CONSTRUCTION TO MATCH EXISTING CONDITIONS.
3. EQUIPMENT AND PIPING SHOWN ON THIS DRAWING ARE BASED ON RECORD INFORMATION PROVIDED IN PART BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITION PRIOR TO STARTING WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
4. FIELD VERIFY INNER CONNECTOR CABINET DIMENSIONS AFTER DEMOLITION AND BEFORE ORDERING NEW FIN TUBE. COORDINATE DISCREPANCIES WITH ENGINEER.
5. MODIFY FIRE SPRINKLER SYSTEM AS REQUIRED TO ACCOMMODATE NEW WORK.
6. DO NOT DAMAGE OR MODIFY EXISTING FLOOR AND WALL TILE.
7. X-RAY ALL NEW FLOOR PENETRATIONS.

KEY NOTES

1. CONNECT TO EXISTING 3" HWS/R SERVING FIFTH EAST.
2. NEW HWS/R AND CONVECTOR IN EXISTING CABINETS. SEE SCHEDULE, M1.1 AND DETAIL 2, M4.1 FOR FURTHER INFORMATION.
3. PROVIDE NEW CAMPUS "STORM WINDOW" TREATMENT TO WINDOWS IN THIS ROOM. COORDINATE WITH PROJECT MANAGER.

DATE: SEPTEMBER 12, 2022	REVISION
SCALE: 1/4"=1'-0"	
DESIGN BY: BUE	
DRAWN BY: BUE	
APPROVED BY: MJS	
PRJ. NO. 20607	

FITZSIMONS BUILDING 500 HEATING UPGRADE MASTERPLAN ENLARGED FIFTH FLOOR PIPING PLANS



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REV.	DATE	DESCRIPTION
-	12/16/22	CONSTRUCTION DOCUMENTS
-	1/25/22	DESIGN DEVELOPMENT

DATE: SEPTEMBER 12, 2022	
SCALE: NONE	
DESIGN BY: BUF	
DRAWN BY: BUF	
APPROVED BY: MJS	
PRJ. NO: 20607	
SHT. NO. M5.0	REVISION -



1. NORTH/CENTRAL RISER INSTALLED AS PART OF PREVIOUS PROJECT.
2. WEST RISERS SHOWN FOR FUTURE PHASES OF THE MASTERPLAN.
3. EAST RISER INSTALLED AS PART OF THIS PROJECT.
4. SEE PLANS FOR RESTROOM ADD ALT WORK (NOT SHOWN HERE).