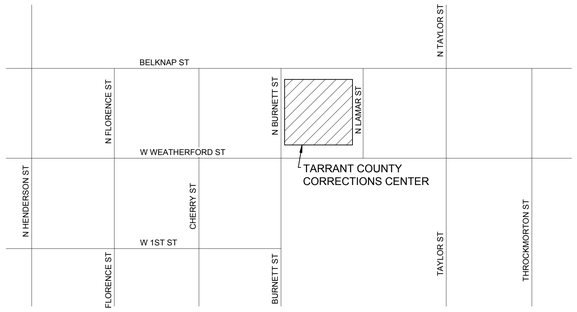
TARRANT COUNTY CORRECTIONS CENTER BUILDING AUTOMATION SYSTEM REPLACEMENT PROJECT

VICINITY MAP



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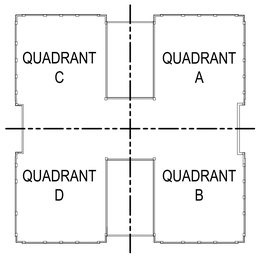
KEY PLAN



BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10011300, 10011302, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

COVER SHEET

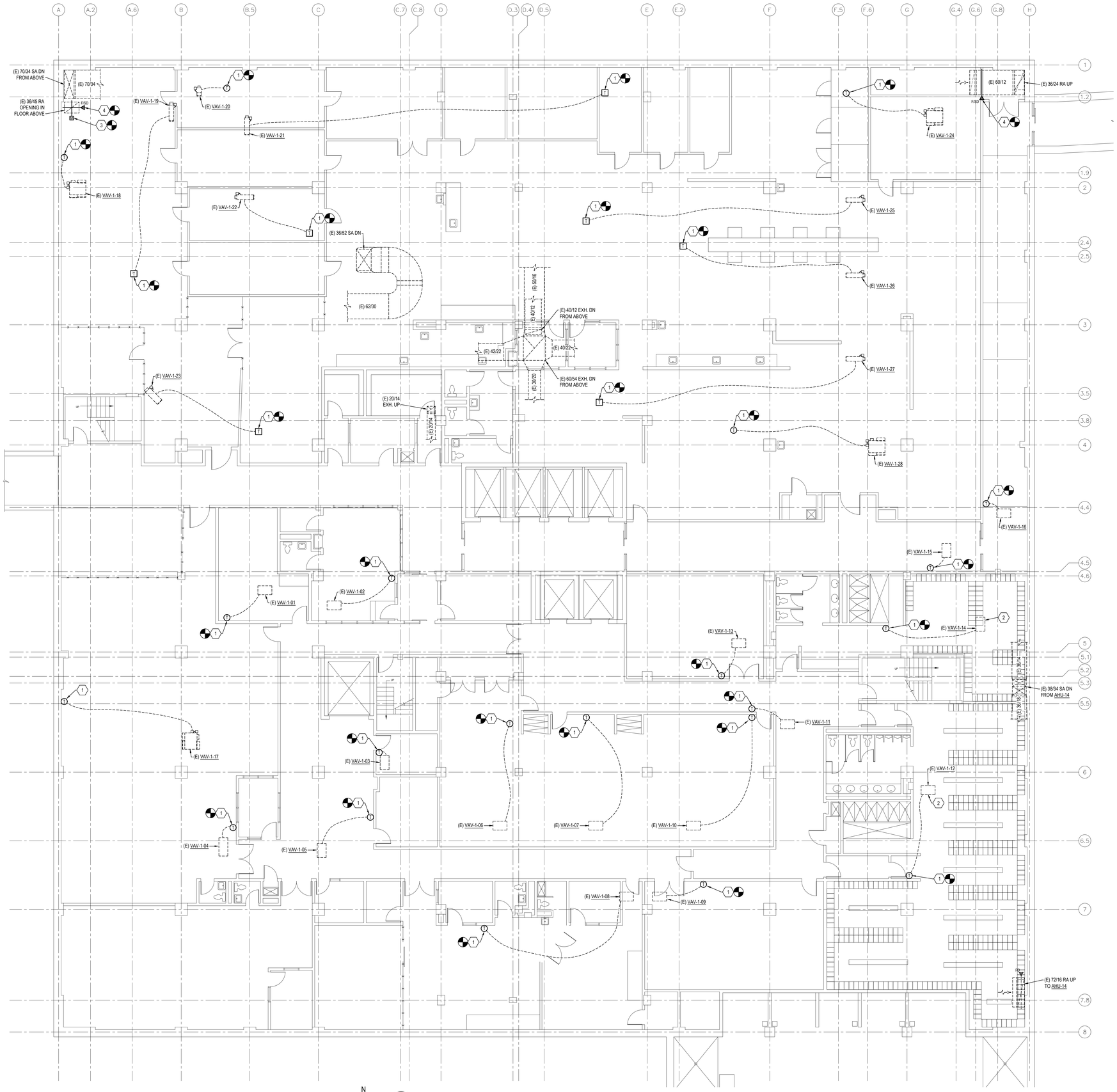
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
G0-1
SHEET 1 OF 1 G SHEETS TOTAL

1.16.2023 2:26PM E:\2021.000,000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\G0-1.dwg G0-1



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1 / M1-1 LEVEL 1 FLOOR PLAN - MECHANICAL

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

HVAC CONTROLS GENERAL NOTES:

1. THIS CONTRACT TO REPLACE THE EXISTING BUILDING AUTOMATION SYSTEM SHALL BE PERFORMED CONCURRENTLY WITH A SEPARATE PROJECT TO REPLACE THE EXISTING AIR HANDLING UNITS. THE WORK FOR THIS CONTRACT SHALL BE PERFORMED IN CLOSE COORDINATION WITH THE AIR HANDLING UNIT CONTRACTOR SO THAT IT WILL BE INSTALLED AS IF ONE SEAMLESS PROJECT, AND SHALL FULLY COMPLY WITH ALL OWNER DIRECTED SCHEDULING AND PHASING OF WORK.
2. FURNISH AND INSTALL ALL MATERIALS AND LABOR REQUIRED TO PROVIDE COMPLETE AND OPERABLE HVAC CONTROLS SYSTEMS WITH ALL ITEMS AND APPURTENANCES NECESSARY EVEN THOUGH NOT SPECIFICALLY IDENTIFIED.
3. ALL WORK AND/OR MATERIALS SHALL BE INSTALLED BY A LICENSED CONTRACTOR AND SHALL CONFORM TO ALL APPLICABLE NATIONAL AND LOCAL BUILDING AND MECHANICAL CODES.
4. COORDINATE EXACT ROUTING OF ALL WORK WITH ALL EXISTING CONDITIONS PRIOR TO INSTALLATION OF WORK.
5. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.
6. THE BUILDING AUTOMATION SYSTEM REPLACEMENT WORK, AND RELATED EQUIPMENT REPLACEMENT WORK (PREFORMED UNDER SEPARATE CONTRACT) WILL BE PREFORMED ON A QUADRANT BY QUADRANT BASIS. WHEN ONE QUADRANT IS DOWN FOR REPLACEMENT, ALL FUNCTIONS ON THE REMAINING THREE QUADRANTS MUST REMAIN FULLY FUNCTIONAL.
7. THE FIRST, SECOND, THIRD FLOORS AND PORTION OF THE FIFTH FLOOR WILL REMAIN OCCUPIED DURING THE DURATION OF THE PROJECT AND WILL NEED TO HAVE HEATING AND AIR CONDITIONING MAINTAINED AT ALL TIMES. PROVIDE TEMPORARY CONTROLS AS REQUIRED.
8. CONTRACTOR SHALL FURNISH AND INSTALL NEW ACCESS DOORS IN CEILINGS AND WALLS AS REQUIRED TO PROVIDE ACCESS TO EXISTING DAMPERS AND VAV BOX LOCATIONS AND FOR ROUTING CONTROLS CABLING. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
9. CONFIRM EXACT SIZE OF ALL DAMPERS PRIOR TO ORDERING.
10. ALL EXISTING THERMOSTATS/TEMPERATURE SENSORS LOCATIONS TO BE FIELD VERIFIED. ALL EXISTING SENSORS FOUND TO BE ABANDONED IN PLACE SHALL BE REMOVED. PATCH EXISTING OPENINGS OF ABANDONED IN PLACE SENSORS TO MATCH EXISTING CONDITIONS.
11. ALL EXISTING CONTROL PANELS, WIRING, PNEUMATIC TUBING, AND ASSOCIATED ACCESSORIES SHALL BE REMOVED. NEW CONTROL PANELS SHALL BE INSTALLED IN THE SAME LOCATIONS IN EACH QUADRANT.
12. DEMOLISH ALL ABANDONED SENSORS AND ASSOCIATED PNEUMATIC TUBING. REMOVE AND REPLACE ALL EXISTING SENSORS ASSOCIATED TO THE NEW EQUIPMENT. REFER TO CONTROLS DETAIL FOR MORE INFORMATION. PATCH EXISTING DUCTWORK/PIPING ASSOCIATED WITH THE REMOVAL/REPLACEMENT OF THE EXISTING SENSORS AND RE-INSULATE UPON COMPLETION OF NEW WORK.

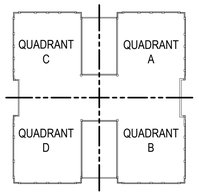
NOTES BY SYMBOL: "#"

1. REMOVE AND REPLACE (E) THERMOSTAT/TEMPERATURE SENSOR.
2. (E) HYDRONIC HEATING WATER CONTROL VALVE, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
3. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
4. (E) FIRE/SMOKE DAMPER TO BE REMOVED AND REPLACED WITH NEW FIRE/SMOKE DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44; #10011300; 10011302; #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

LEVEL 1 FLOOR PLAN - MECHANICAL

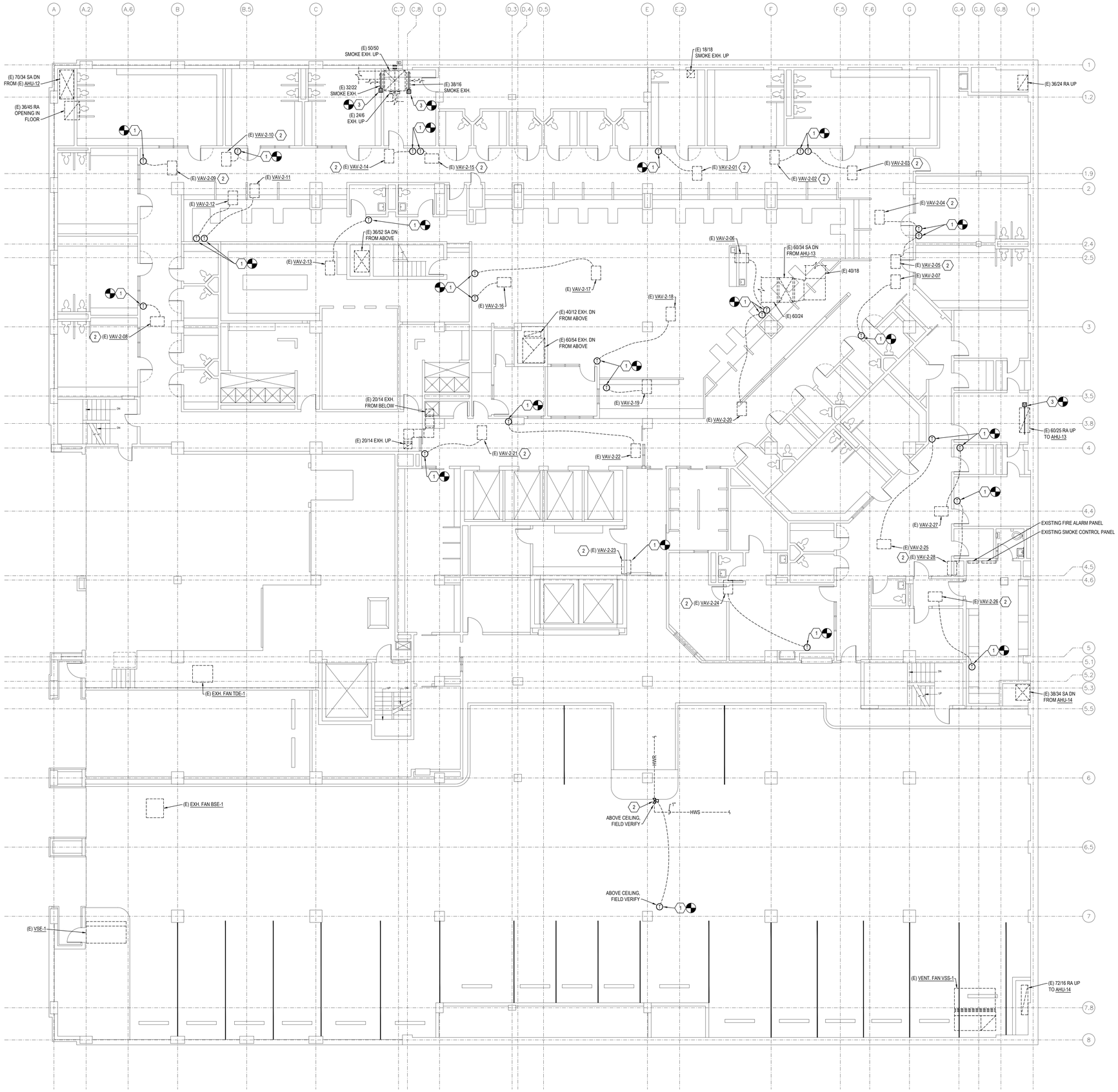
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-1
SHEET 1 OF 20 M SHEETS TOTAL

1.16.2023 2:26PM E:\2021.000\2021.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-1.dwg M1-1



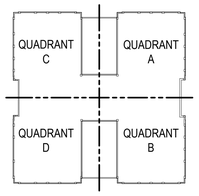
NOTES BY SYMBOL: "#"

1. REMOVE AND REPLACE (E) THERMOSTAT/TEMPERATURE SENSOR.
2. (E) HYDRONIC HEATING WATER CONTROL VALVE, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
3. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



N

1 / M1-2 LEVEL 2 FLOOR PLAN - MECHANICAL

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

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engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@hbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10011300, 10011302, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

LEVEL 2 FLOOR PLAN - MECHANICAL

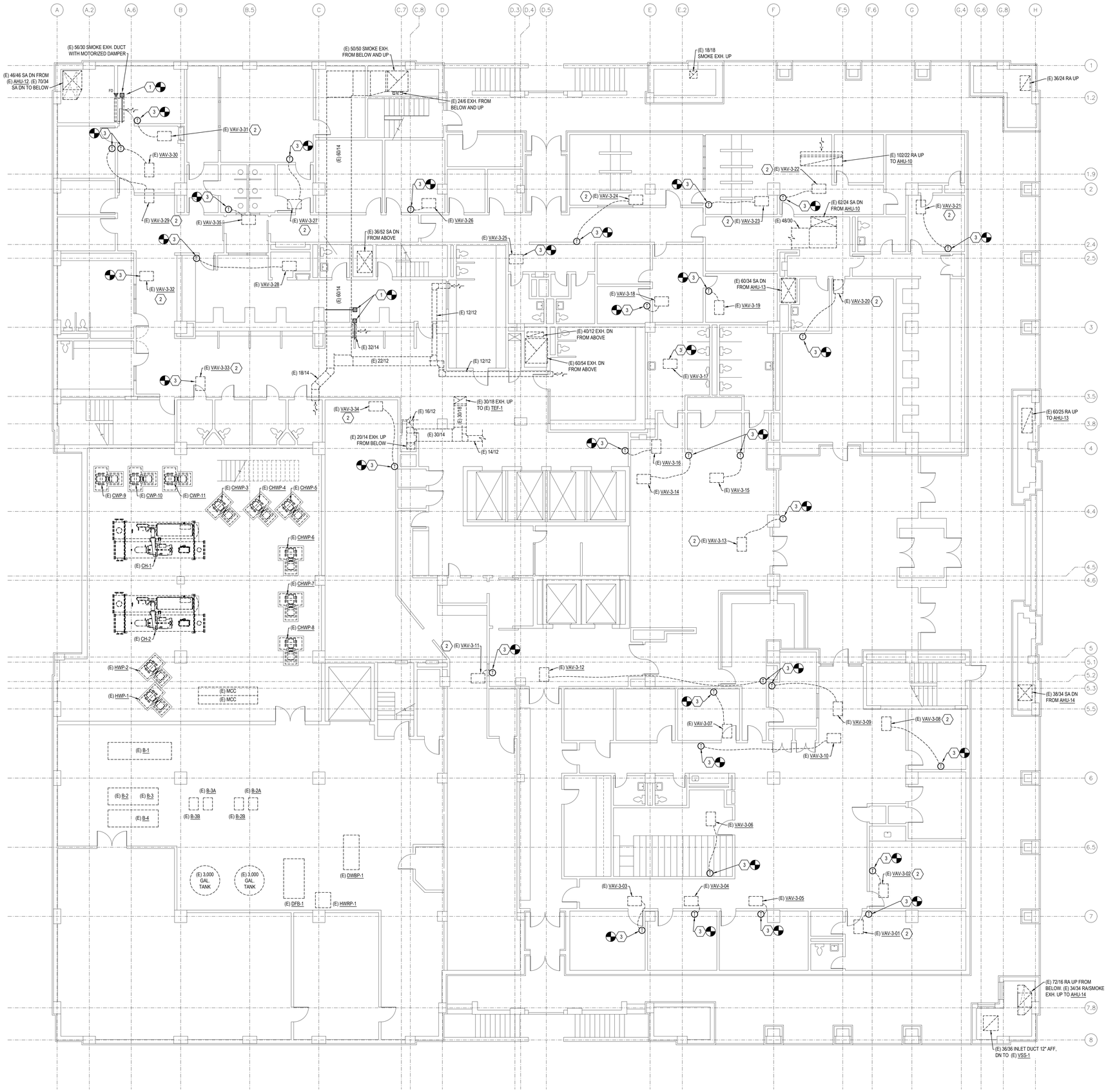
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-2
SHEET 2 OF 20 M SHEETS TOTAL

1.16.2023 2:27PM E:\2021.000\.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-2.dwg M1-2



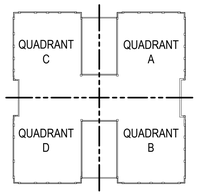
NOTES BY SYMBOL: "#"

1. (E) MOTORIZED SMOKE DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED SMOKE DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
2. (E) HYDRONIC HEATING WATER CONTROL VALVE, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
3. REMOVE AND REPLACE (E) THERMOSTAT/TEMPERATURE SENSOR.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



N

1 / M1-3 LEVEL 3 FLOOR PLAN - MECHANICAL

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

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engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10011300, 10015902, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

LEVEL 3 FLOOR PLAN - MECHANICAL

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-3
SHEET 3 OF 20 M SHEETS TOTAL

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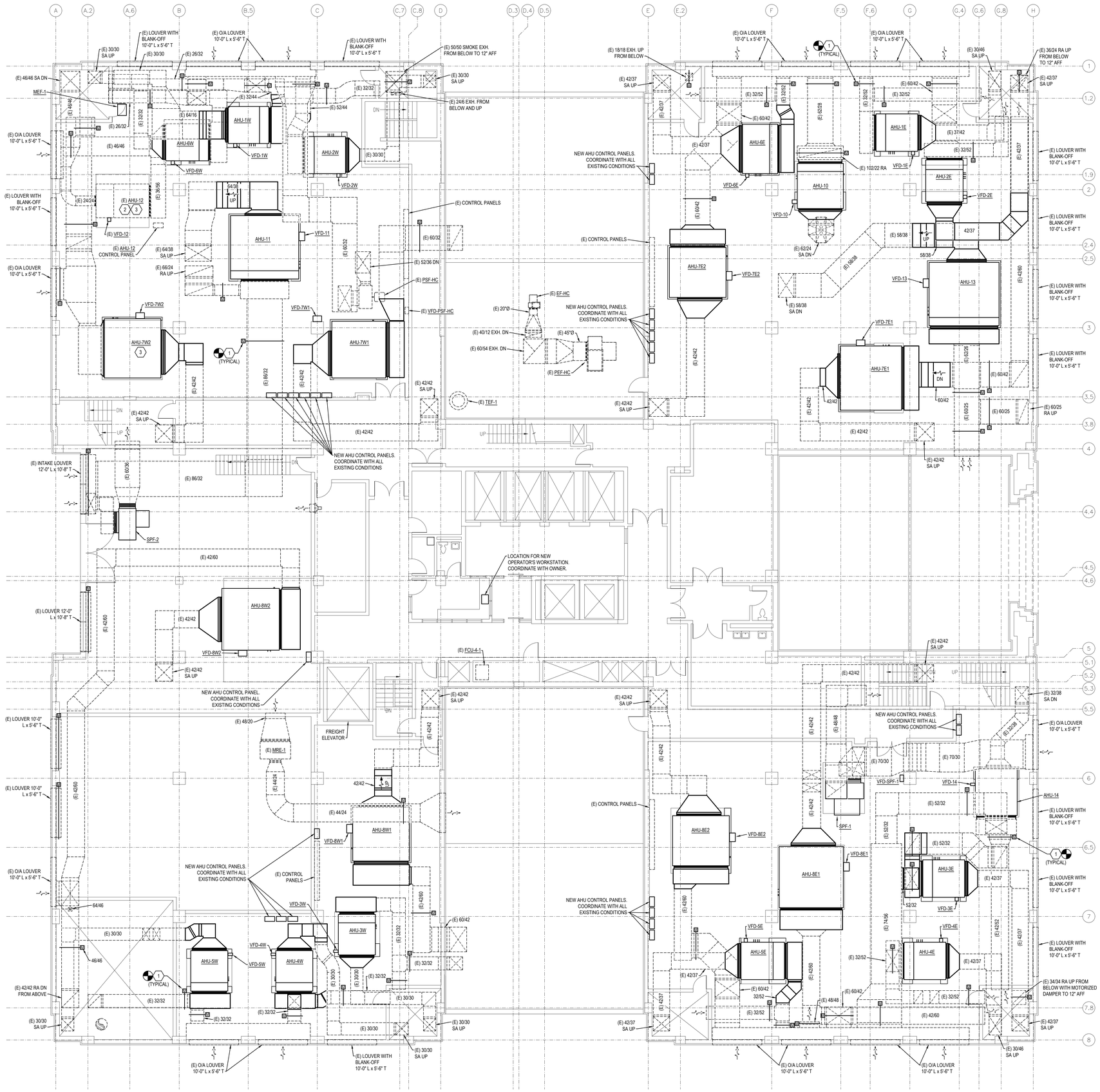


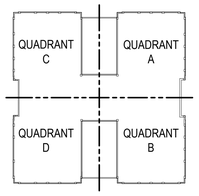
NOTES BY SYMBOL: "(#)"

1. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
2. (E) HYDRONIC HEATING WATER AND CHILLED WATER CONTROL VALVES, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
3. NEW UV-LIGHT TO BE INSTALLED BY AIR HANDLING UNIT CONTRACTOR IN (E) AHU-12 AND CONNECTED TO BUILDING AUTOMATION SYSTEM.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



N

1 / M1-4 LEVEL 4 FLOOR PLAN - MECHANICAL

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

BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10011300, 10015902, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

LEVEL 4 FLOOR PLAN - MECHANICAL

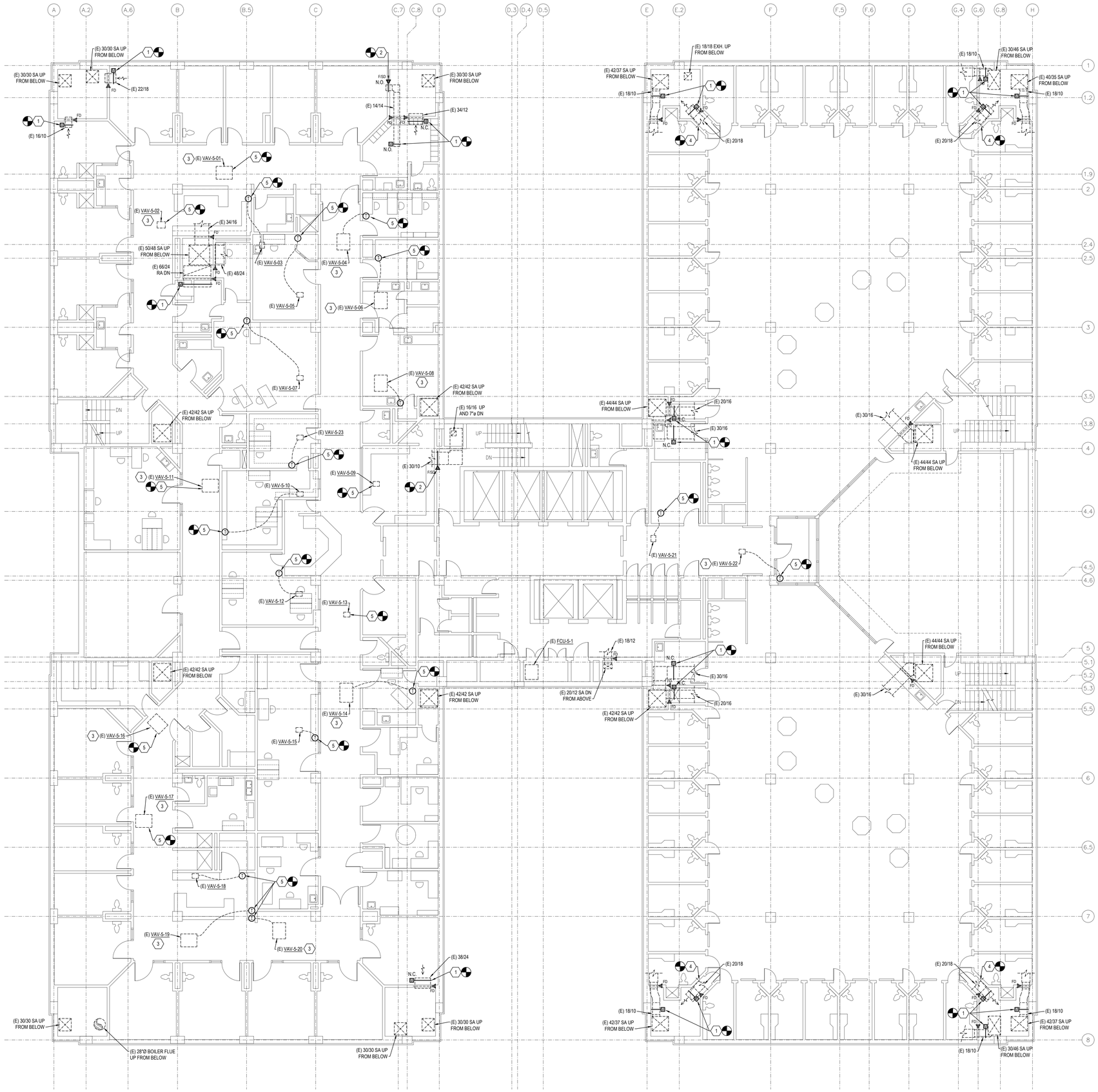
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-4
SHEET 4 OF 20 M SHEETS TOTAL

1.17.2023 4:07PM E:\2021.000.000\2021.010.xx • Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\08 March\M1-4.dwg M1-4



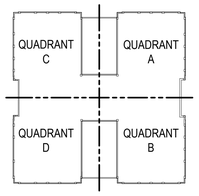
NOTES BY SYMBOL: "#"

1. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
2. (E) FIRE/SMOKE DAMPER TO BE REMOVED AND REPLACED WITH NEW FIRE/SMOKE DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
3. (E) HYDRONIC HEATING WATER CONTROL VALVE, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
4. REMOVE AND REPLACE (E) 2 SECTION F/SD ABOVE CHASE ACCESS DOOR WITH NEW SINGLE SECTION 20"x46" F/SD (NO). SET DAMPER POSITION TO BALANCE AIRFLOW FOR NORMAL OPERATION.
5. REMOVE AND REPLACE (E) THERMOSTAT/TEMPERATURE SENSOR.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



N

1 / M1-5 LEVEL 5 FLOOR PLAN - MECHANICAL

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

BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

NO.	DESCRIPTION	DATE

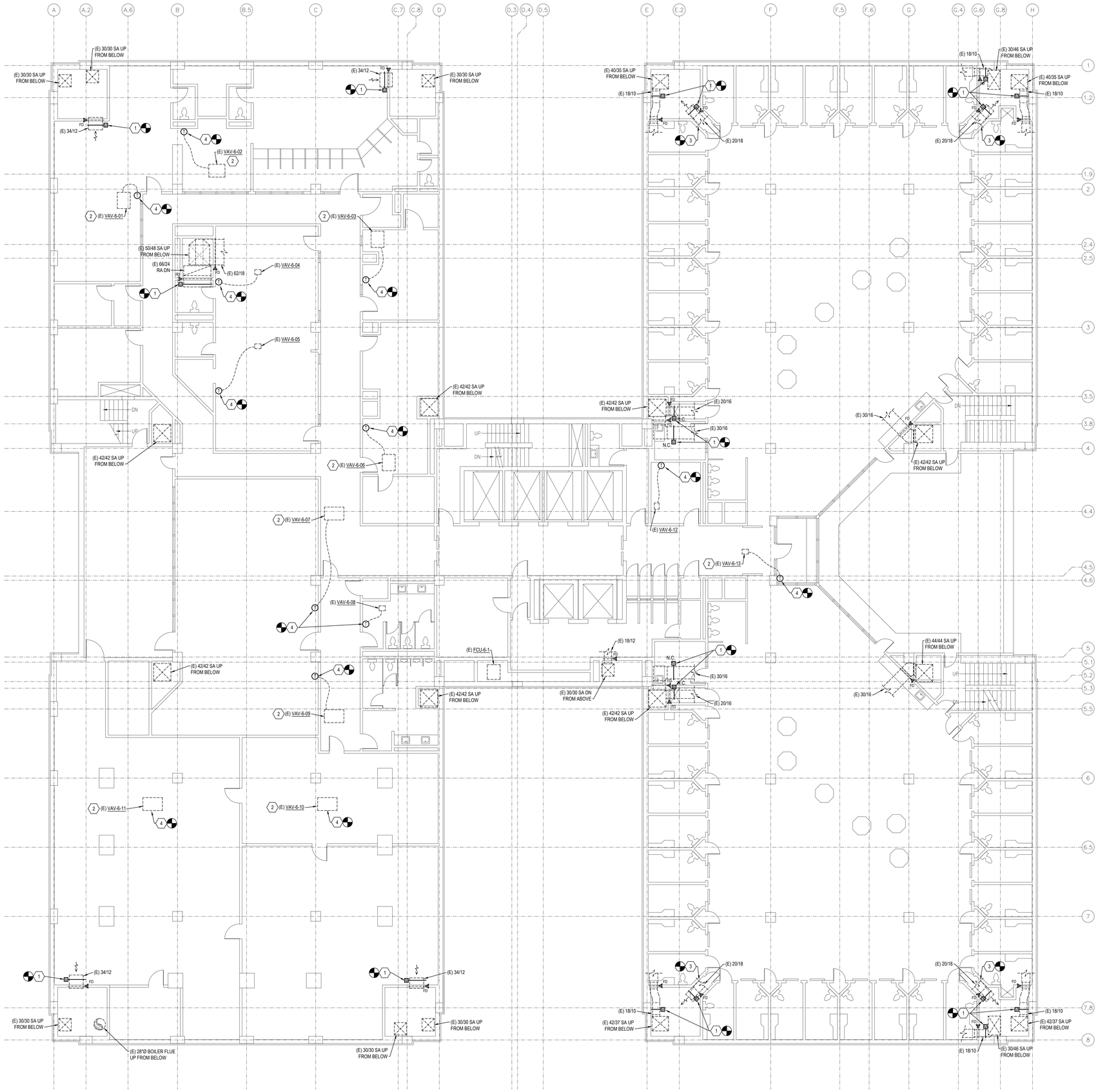
LEVEL 5 FLOOR PLAN - MECHANICAL

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-5
SHEET 5 OF 20 M SHEETS TOTAL

1.17.2023 4:07PM E:\2021.000.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-5.dwg M1-5



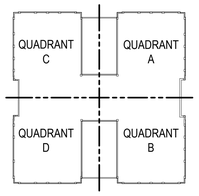
NOTES BY SYMBOL: "(#)"

1. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
2. (E) HYDRONIC HEATING WATER CONTROL VALVE, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
3. REMOVE AND REPLACE (E) 2 SECTION F/SD ABOVE CHASE ACCESS DOOR WITH NEW SINGLE SECTION 20"X46" F/SD (NO). SET DAMPER POSITION TO BALANCE AIRFLOW FOR NORMAL OPERATION.
4. REMOVE AND REPLACE (E) THERMOSTAT/TEMPERATURE SENSOR.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



N

1 / M1-6 LEVEL 6 FLOOR PLAN - MECHANICAL

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

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engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

NO.	DESCRIPTION	DATE

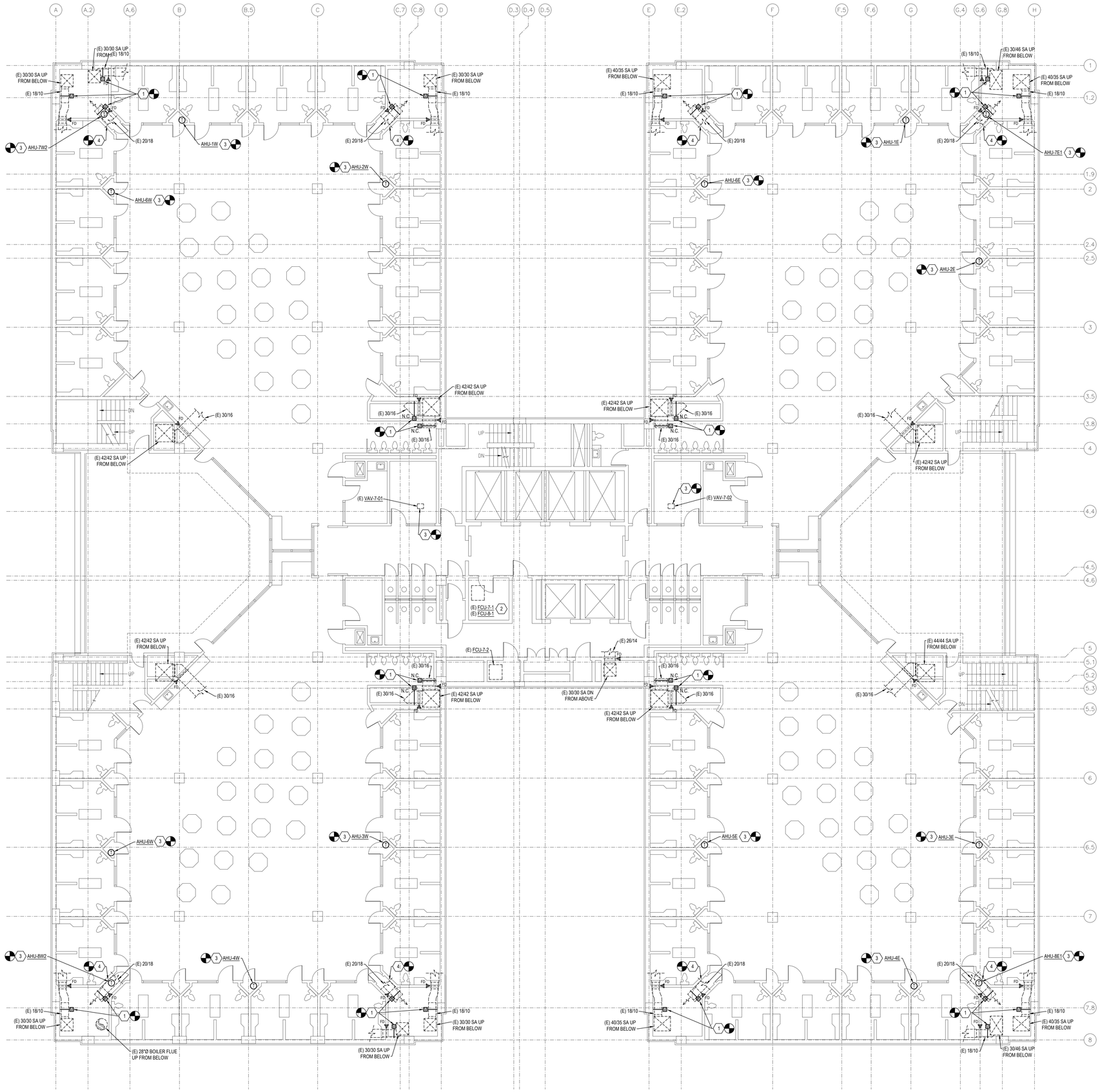
LEVEL 6 FLOOR PLAN - MECHANICAL

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-6
SHEET 6 OF 20 M SHEETS TOTAL

1.17.2023 4:07PM E:\2021.000.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-6.dwg M1-6



1 M1-7 LEVEL 7 & 8 FLOOR PLAN - MECHANICAL

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

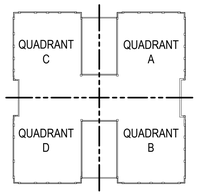
NOTES BY SYMBOL: "#"

1. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
2. (E) CHILLED WATER CONTROL VALVE, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
3. REMOVE AND REPLACE (E) THERMOSTAT/TEMPERATURE SENSOR.
4. REMOVE AND REPLACE (E) 2 SECTION F/SD ABOVE CHASE ACCESS DOOR WITH NEW SINGLE SECTION 20"X46" F/SD (NO). SET DAMPER POSITION TO BALANCE AIRFLOW FOR NORMAL OPERATION.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

LEVEL 7 & 8 FLOOR PLAN - MECHANICAL

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
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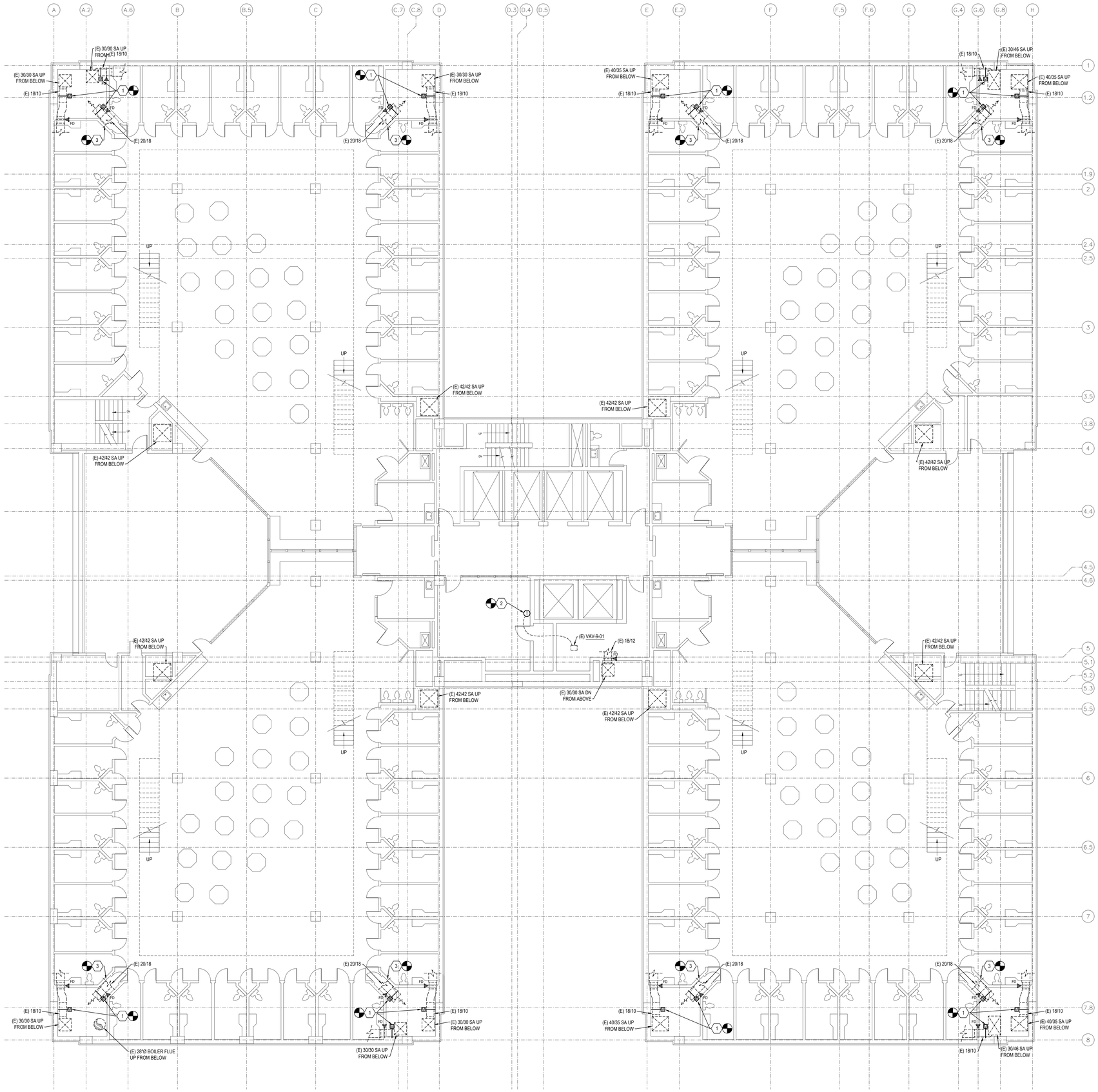
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-7
SHEET 7 OF 20 M SHEETS TOTAL

1.17.2023 4:06PM E:\2021.000.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-7.dwg M1-7



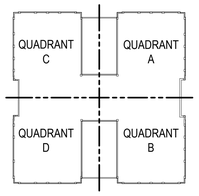
NOTES BY SYMBOL: "#"

1. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
2. REMOVE AND REPLACE (E) THERMOSTAT/TEMPERATURE SENSOR.
3. REMOVE AND REPLACE (E) 2 SECTION F/SD ABOVE CHASE ACCESS DOOR WITH NEW SINGLE SECTION 20"X48" F/SD (NO). SET DAMPER POSITION TO BALANCE AIRFLOW FOR NORMAL OPERATION.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



N

1 / M1-8 LEVEL 9, 10, 11, 12, & 13 FLOOR PLAN - MECHANICAL

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

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engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10017300, 10011502, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

LEVEL 9, 10, 11, 12, & 13
FLOOR PLAN - MECHANICAL

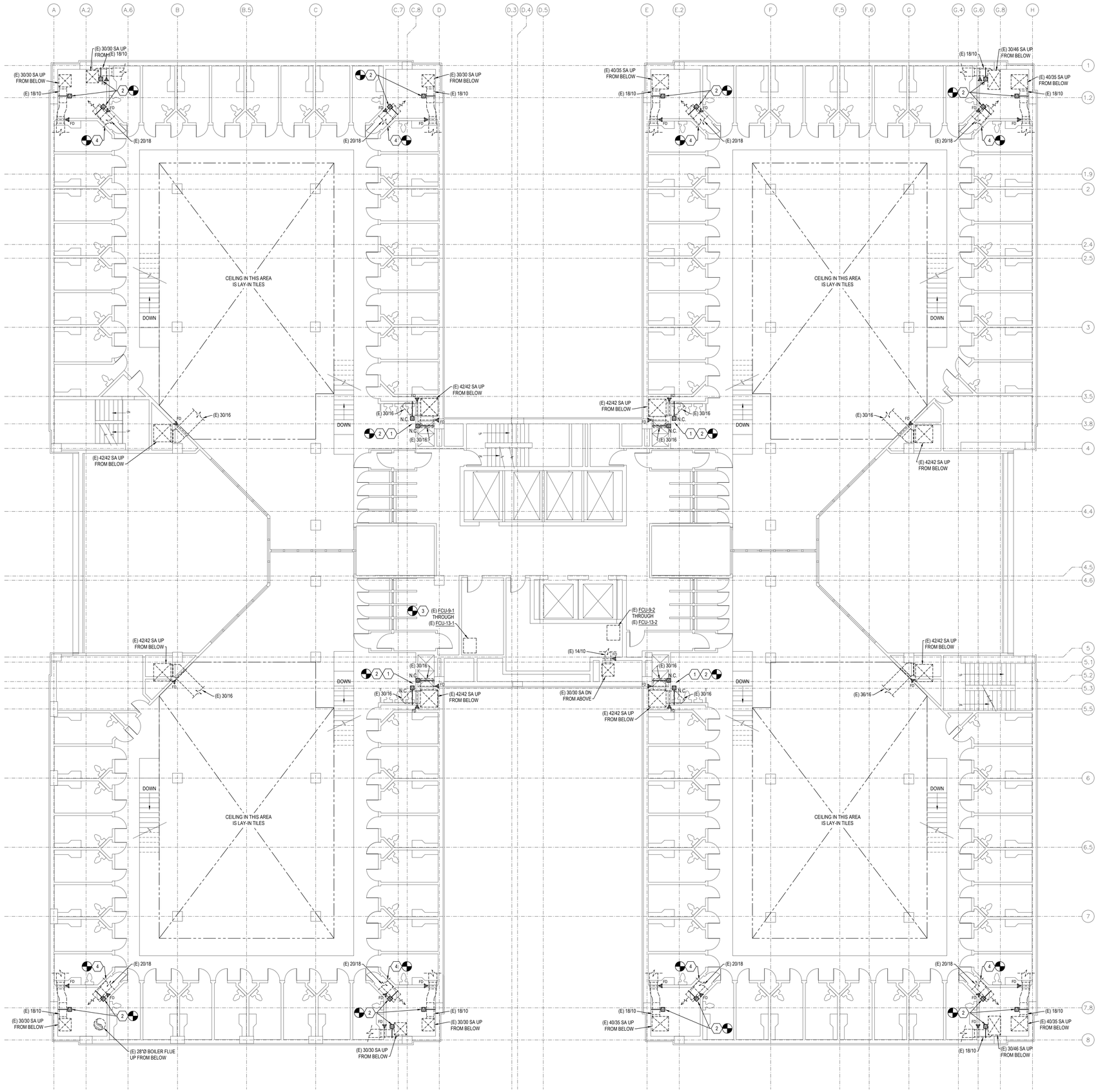
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-8
SHEET 8 OF 20 M SHEETS TOTAL

1.16.2023 2:49PM E:\2021.000.000\2021.010.xx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-8.dwg M1-8



N

1
M1-9

LEVEL 9M, 10M, 11M, 12M, & 13M FLOOR PLAN - MECHANICAL

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

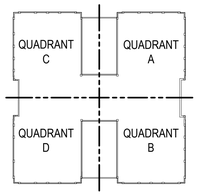
NOTES BY SYMBOL: "#"

1. WHEN INSTALLING NEW DAMPERS, TAKE CARE TO ADJUST LOCATION OF DAMPER LINKAGES AS REQUIRED SO THAT THEY DO NOT CONFLICT WITH DRAIN LINES FROM FLOOR ABOVE.
2. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.
3. (E) CHILLED WATER CONTROL VALVE, PROVIDED BY THIS CONTRACTOR, TO BE REMOVED AND REPLACED BY AIR HANDLING UNIT REPLACEMENT CONTRACTOR.
4. REMOVE AND REPLACE (E) 2 SECTION F/SD ABOVE CHASE ACCESS DOOR WITH NEW SINGLE SECTION 20"X46" F/SD (NO). SET DAMPER POSITION TO BALANCE AIRFLOW FOR NORMAL OPERATION.

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



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engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
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TBPE Firm #44, #10011300, 10011302, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

LEVEL 9M, 10M, 11M, 12M, & 13M
FLOOR PLAN - MECHANICAL

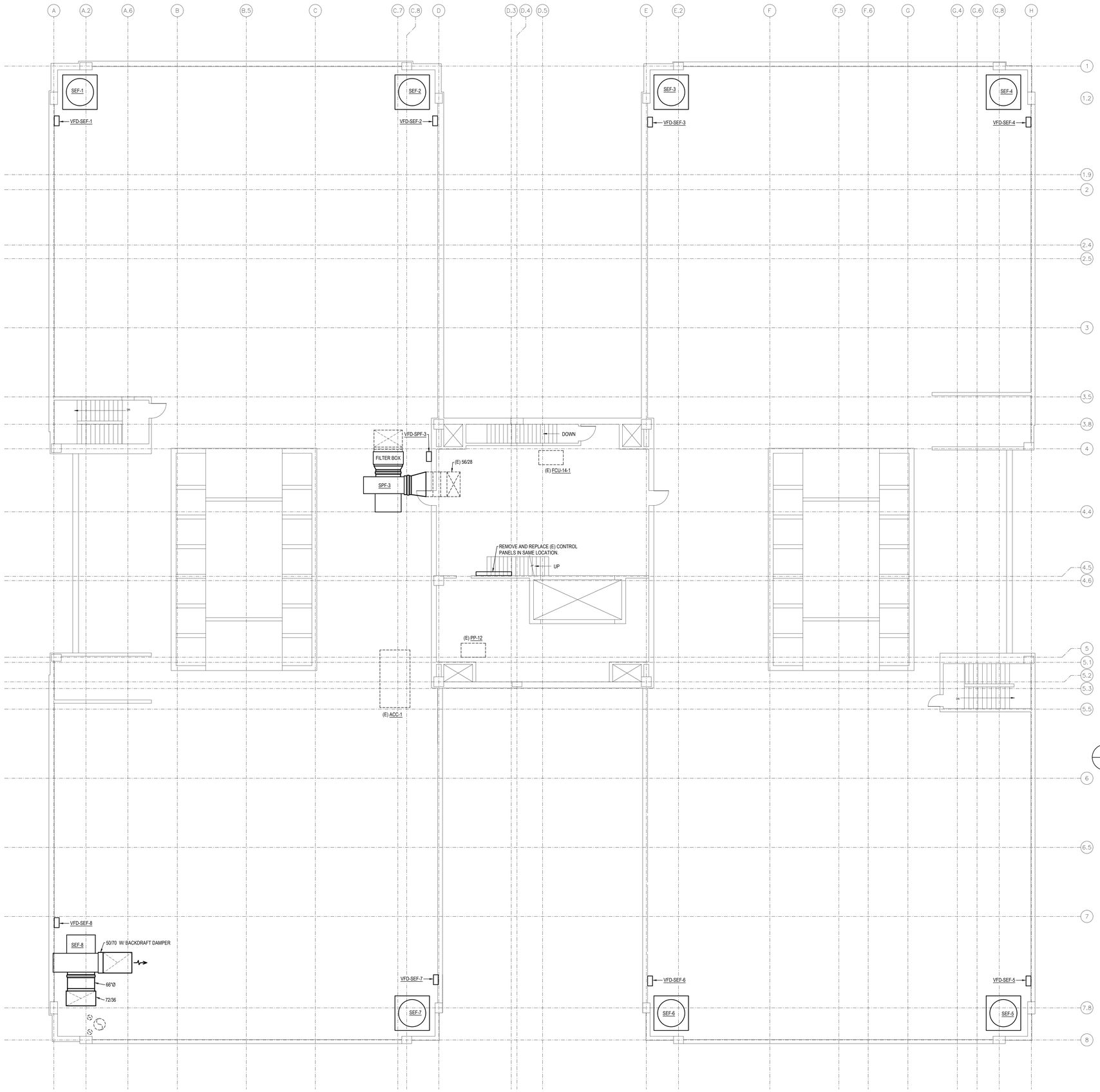
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M1-9
SHEET 9 OF 20 M SHEETS TOTAL

1.17.2023 4:06PM E:\2021.000.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-9.dwg M1-9



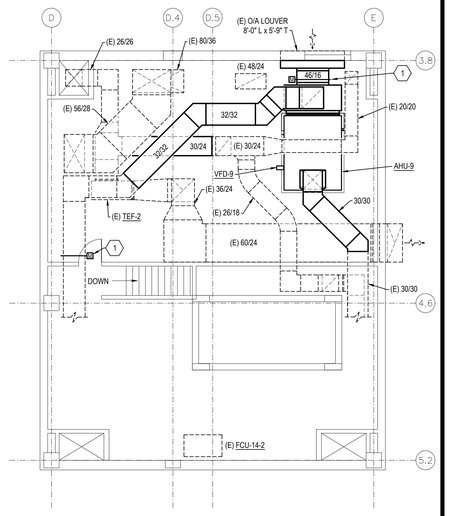
N

1 M1-10 ROOF PLAN - MECHANICAL

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

NOTES BY SYMBOL: "(#)"

1. (E) MOTORIZED DAMPER TO BE REMOVED AND REPLACED WITH NEW MOTORIZED DAMPER. REFER TO SHEET M3-1 AND M3-2 FOR ADDITIONAL INFORMATION.



N

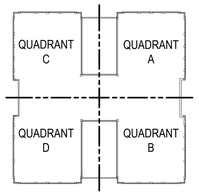
2 M1-10 PENTHOUSE PLAN - MECHANICAL

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

SHEET NOTES:

1. CLOSELY COORDINATE ALL AUTOMATIC CONTROL DAMPERS, FIRE/SMOKE DAMPERS, CONTROL VALVES AND ALL OTHER CONTROL ELEMENTS, PROVIDED BY THIS CONTRACTOR, WITH THE AIR HANDLING UNIT CONTRACTOR TO INSTALL.

KEY PLAN



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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

ROOF & PENTHOUSE PLAN - MECHANICAL

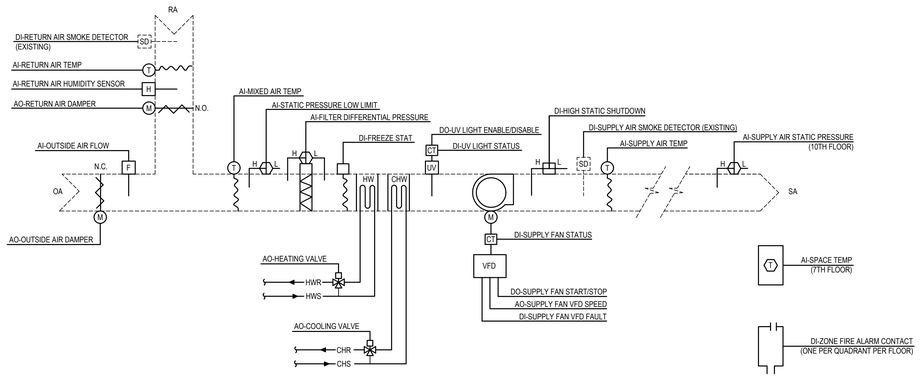
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

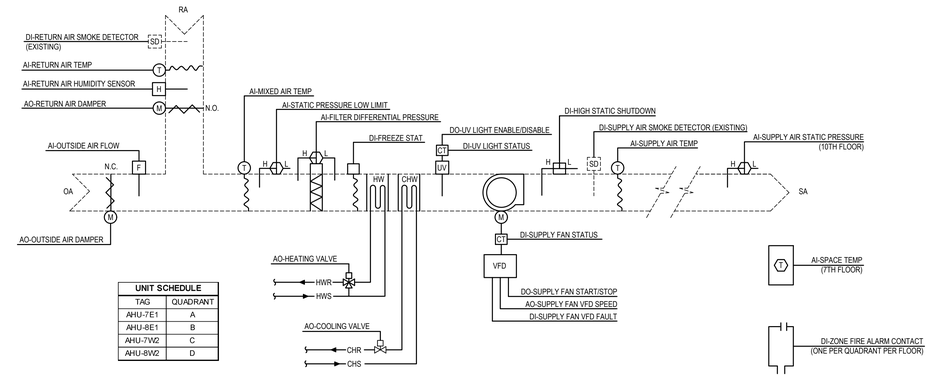
SHEET
M1-10
SHEET 10 OF 20 M SHEETS TOTAL

1.16.2023 2:55PM E:\2021.000\.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M1-10.dwg M1-10



1 AIR HANDLING UNIT CONTROL DIAGRAM - CELL UNITS (AHU-1E THRU 6E, AND 1W THRU 6W)
NOT TO SCALE (TYPICAL FOR 12)

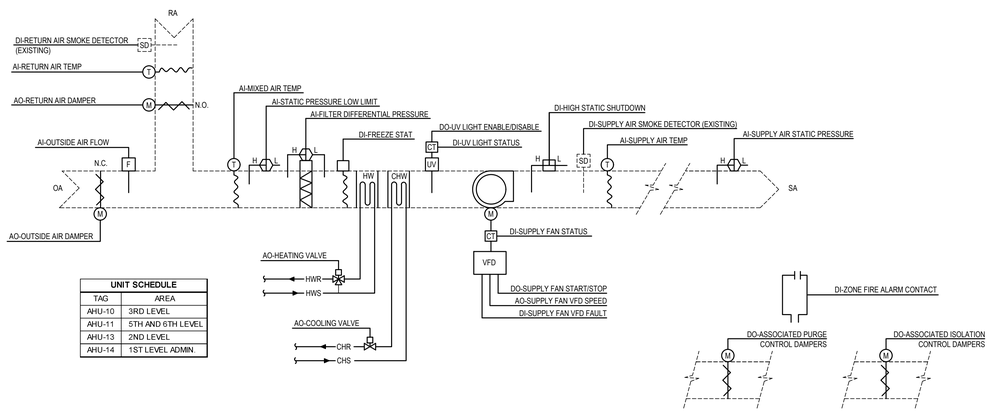
NOTES:
1. CONNECT TO AUXILIARY CONTACT IN EACH EXISTING DUCT MOUNTED SMOKE DETECTOR TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
2. REMOVE ALL EXISTING UNUSED CONTROLS. INSTALL AIRTIGHT COVER OVER ALL OPENINGS IN DUCTWORK WHERE CONTROL DEVICES HAVE BEEN REMOVED.



UNIT SCHEDULE	
TAG	QUADRANT
AHU-7E1	A
AHU-8E1	B
AHU-7W2	C
AHU-8W2	D

2 AIR HANDLING UNIT CONTROL DIAGRAM - DAY ROOM UNITS (AHU-7E1, 8E1, 7W2, 8W2)
NOT TO SCALE (TYPICAL FOR 4)

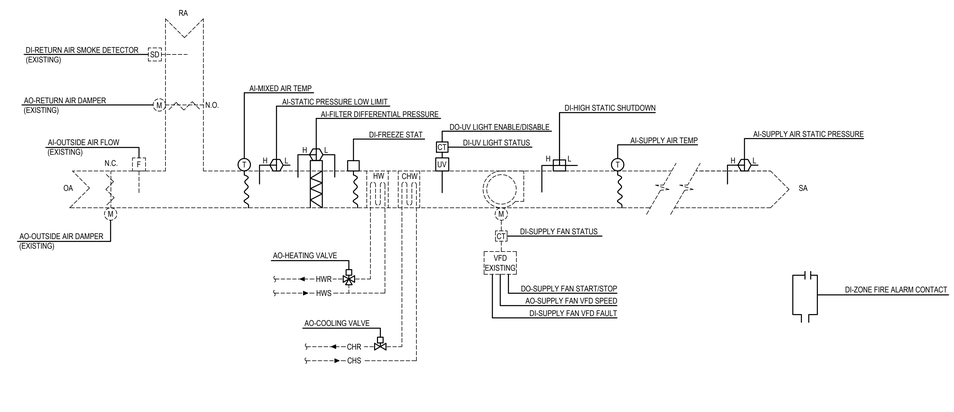
NOTES:
1. CONNECT TO AUXILIARY CONTACT IN EACH EXISTING DUCT MOUNTED SMOKE DETECTOR TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
2. REMOVE ALL EXISTING UNUSED CONTROLS. INSTALL AIRTIGHT COVER OVER ALL OPENINGS IN DUCTWORK WHERE CONTROL DEVICES HAVE BEEN REMOVED.



UNIT SCHEDULE	
TAG	AREA
AHU-10	3RD LEVEL
AHU-11	5TH AND 6TH LEVEL
AHU-13	2ND LEVEL
AHU-14	1ST LEVEL ADMIN.

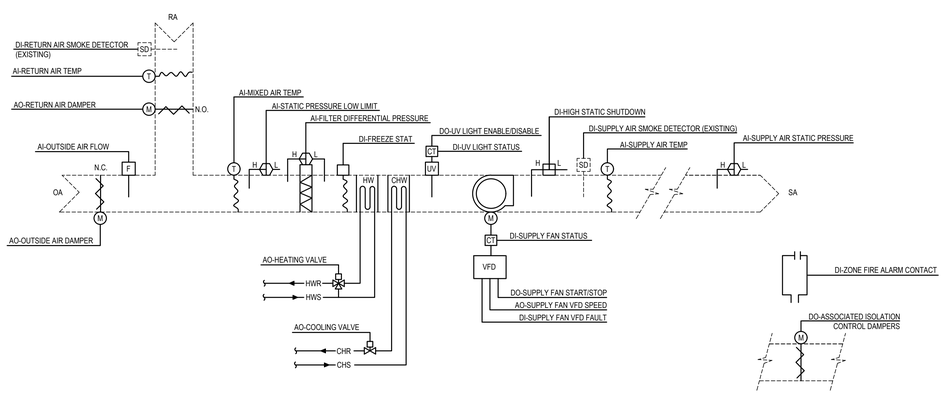
3 AIR HANDLING UNIT CONTROL DIAGRAM (AHU-10, 11, 13, 14)
NOT TO SCALE (TYPICAL FOR 4)

NOTES:
1. CONNECT TO AUXILIARY CONTACT IN EACH EXISTING DUCT MOUNTED SMOKE DETECTOR TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
2. REMOVE ALL EXISTING UNUSED CONTROLS. INSTALL AIRTIGHT COVER OVER ALL OPENINGS IN DUCTWORK WHERE CONTROL DEVICES HAVE BEEN REMOVED.



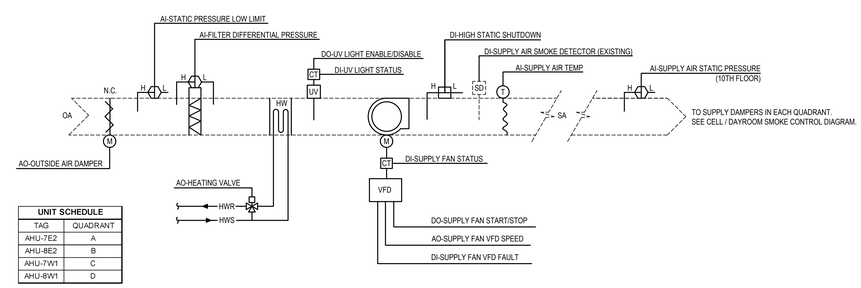
4 EXISTING AIR HANDLING UNIT CONTROL DIAGRAM (AHU-12)
NOT TO SCALE

NOTES:
1. CONNECT TO AUXILIARY CONTACT IN EACH EXISTING DUCT MOUNTED SMOKE DETECTOR TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
2. REMOVE ALL EXISTING UNUSED CONTROLS. INSTALL AIRTIGHT COVER OVER ALL OPENINGS IN DUCTWORK WHERE CONTROL DEVICES HAVE BEEN REMOVED.



5 AIR HANDLING UNIT CONTROL DIAGRAM - ELEVATOR LOBBIES (AHU-9)
NOT TO SCALE

NOTES:
1. SOME VAV BOXES ON LEVELS 7 THROUGH 13 ARE SERVED BY THIS UNIT.
2. CONNECT TO AUXILIARY CONTACT IN EACH EXISTING DUCT MOUNTED SMOKE DETECTOR TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
3. REMOVE ALL EXISTING UNUSED CONTROLS. INSTALL AIRTIGHT COVER OVER ALL OPENINGS IN DUCTWORK WHERE CONTROL DEVICES HAVE BEEN REMOVED.



UNIT SCHEDULE	
TAG	QUADRANT
AHU-7E2	A
AHU-8E2	B
AHU-7W1	C
AHU-8W1	D

6 AIR HANDLING UNIT CONTROL DIAGRAM - SMOKE REMOVAL UNITS (AHU-7E2, 8E2, 7W1, 8W1)
NOT TO SCALE (TYPICAL FOR 4)

NOTES:
1. CONNECT TO AUXILIARY CONTACT IN EACH EXISTING DUCT MOUNTED SMOKE DETECTOR TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
2. REMOVE ALL EXISTING UNUSED CONTROLS. INSTALL AIRTIGHT COVER OVER ALL OPENINGS IN DUCTWORK WHERE CONTROL DEVICES HAVE BEEN REMOVED.

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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

CONTROL DIAGRAMS

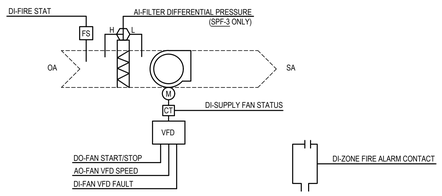
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M2-1
SHEET 11 OF 20 M SHEETS TOTAL

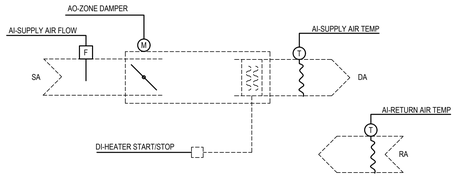
1.16.2023 2:58PM E:\2021.000\2021.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replacd\01 Design & Drafting\06 Mech\M2-1-M2-7.dwg M2-1



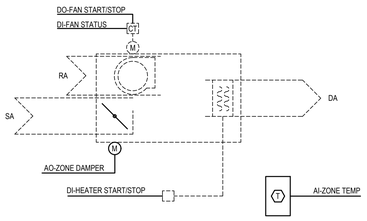
NOTES:

1. APPLIES TO SPF-1, SPF-2, AND SPF-3.

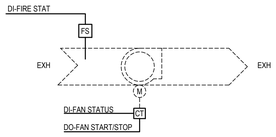
1 STAIRWELL PRESSURIZATION FAN CONTROL DIAGRAM
NOT TO SCALE (TYPICAL FOR 3)



2 SINGLE DUCT VAV BOX WITH ELECTRIC HEAT - (E)AHU-12
NOT TO SCALE (TYPICAL FOR 7)



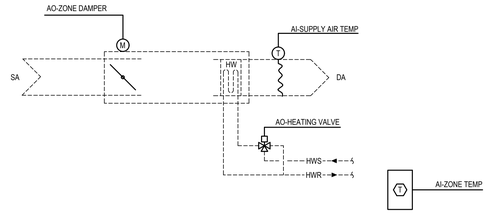
3 PARALLEL FAN POWERED VAV BOX WITH ELECTRIC HEAT - (E)AHU-12
NOT TO SCALE (TYPICAL FOR 3)



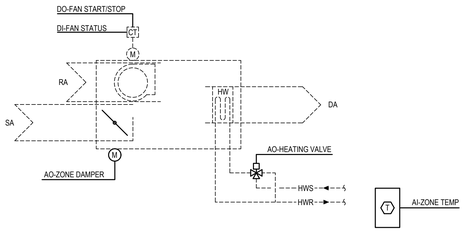
NOTES:

1. APPLIES TO BSE-1, TDE-1, VS-1, VSS-1, MEF-1, AND EF-HC.

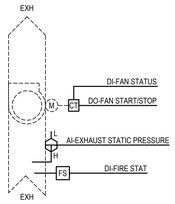
4 EXHAUST FAN CONTROL DIAGRAM
NOT TO SCALE (TYPICAL FOR 6)



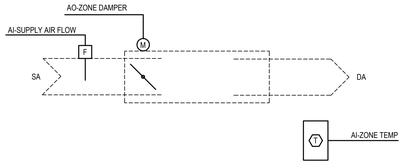
5 SINGLE DUCT VAV BOX WITH HYDRONIC HEATING COIL
NOT TO SCALE (TYPICAL FOR 19)



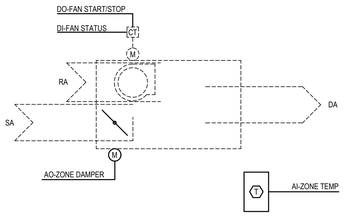
6 PARALLEL FAN POWERED VAV BOX WITH HYDRONIC HEATING COIL
NOT TO SCALE (TYPICAL FOR 39)



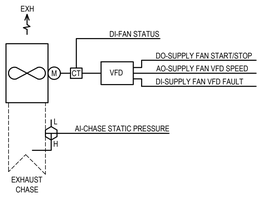
7 TOILET EXHAUST FAN CONTROL DIAGRAM
NOT TO SCALE (TYPICAL FOR 2)



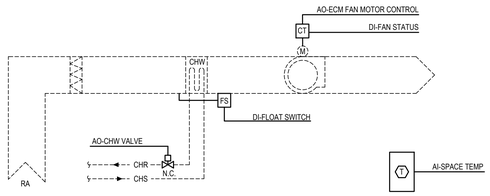
8 SINGLE DUCT VAV BOX - COOLING ONLY
NOT TO SCALE (TYPICAL FOR 66)



9 PARALLEL FAN POWERED VAV BOX - COOLING ONLY (AHU-14)
NOT TO SCALE (TYPICAL FOR 1)



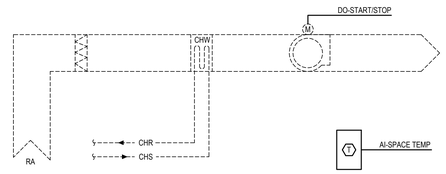
10 SMOKE EXHAUST FAN CONTROL DIAGRAM
NOT TO SCALE (TYPICAL FOR 8)



NOTES:

1. APPLIES TO FCU-7-1, FCU-8-1, FCU-9-1, FCU-10-1, FCU-11-1, FCU-12-1, AND FCU-13-1.

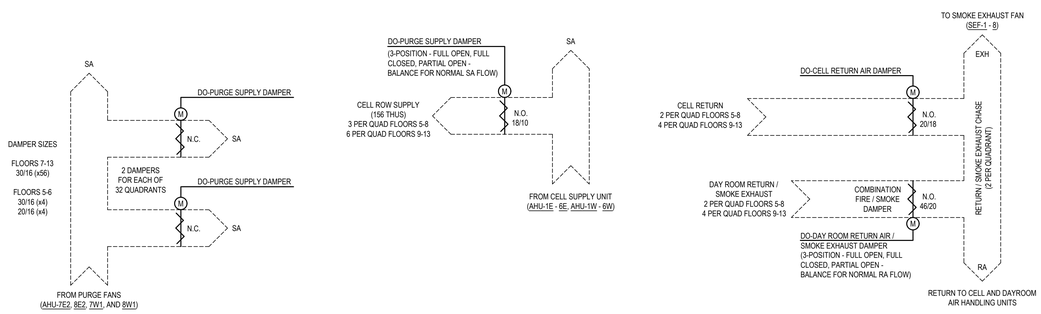
11 FAN COIL UNIT CONTROL DIAGRAM (ECM MOTOR)
NOT TO SCALE (TYPICAL FOR 7)



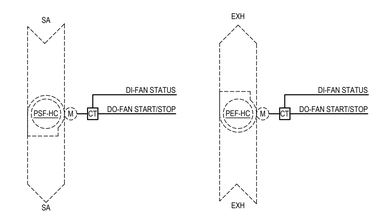
NOTES:

1. APPLIES TO FCU-4-1, FCU-5-1, FCU-6-1, FCU-7-2, FCU-9-2, FCU-10-2, FCU-11-2, FCU-12-2, FCU-13-2, FCU-14-2, AND FCU-15-2.

12 FAN COIL UNIT CONTROL DIAGRAM
NOT TO SCALE (TYPICAL FOR 11)



13 CELL / DAYROOM SMOKE CONTROL DIAGRAM
NOT TO SCALE (EVACUATION AND PRESSURIZATION)



14 HOLDING CELL SMOKE PURGE CONTROL DIAGRAM
NOT TO SCALE

BAIRD, HAMPTON & BROWN
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mail@bhbinc.com • 817.338.1277 • bhbinc.com
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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

CONTROL DIAGRAMS

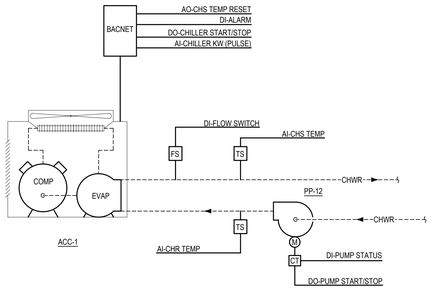
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

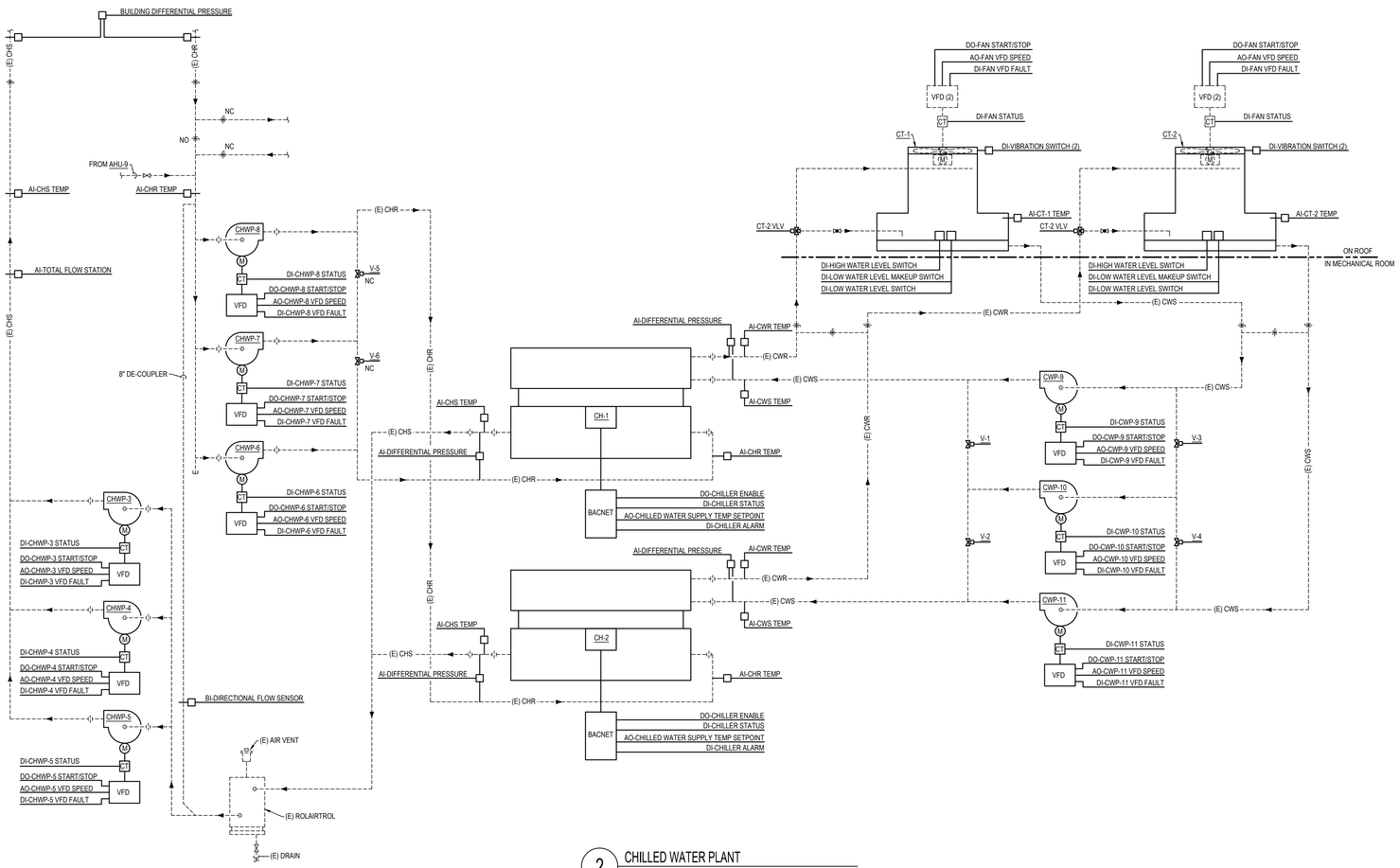
PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M2-2
SHEET 12 OF 20 M SHEETS TOTAL

1.16.2023 2:58PM E:\2021.000\.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M2-1-M2-7.dwg M2-2



1 AIR COOLED CHILLER SYSTEM
NOT TO SCALE



2 CHILLED WATER PLANT
NOT TO SCALE

BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10011300, 10011302, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

CONTROL DIAGRAMS

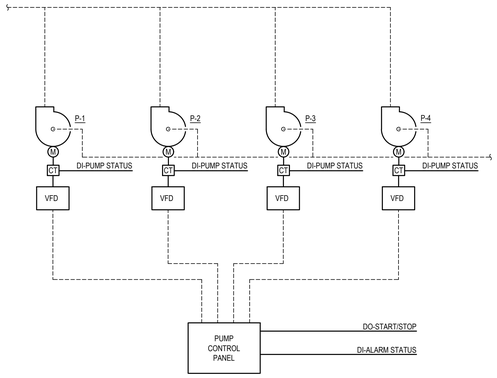
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
1/17/23

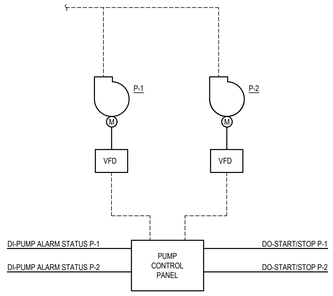
PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M2-3
SHEET 13 OF 20 M SHEETS TOTAL

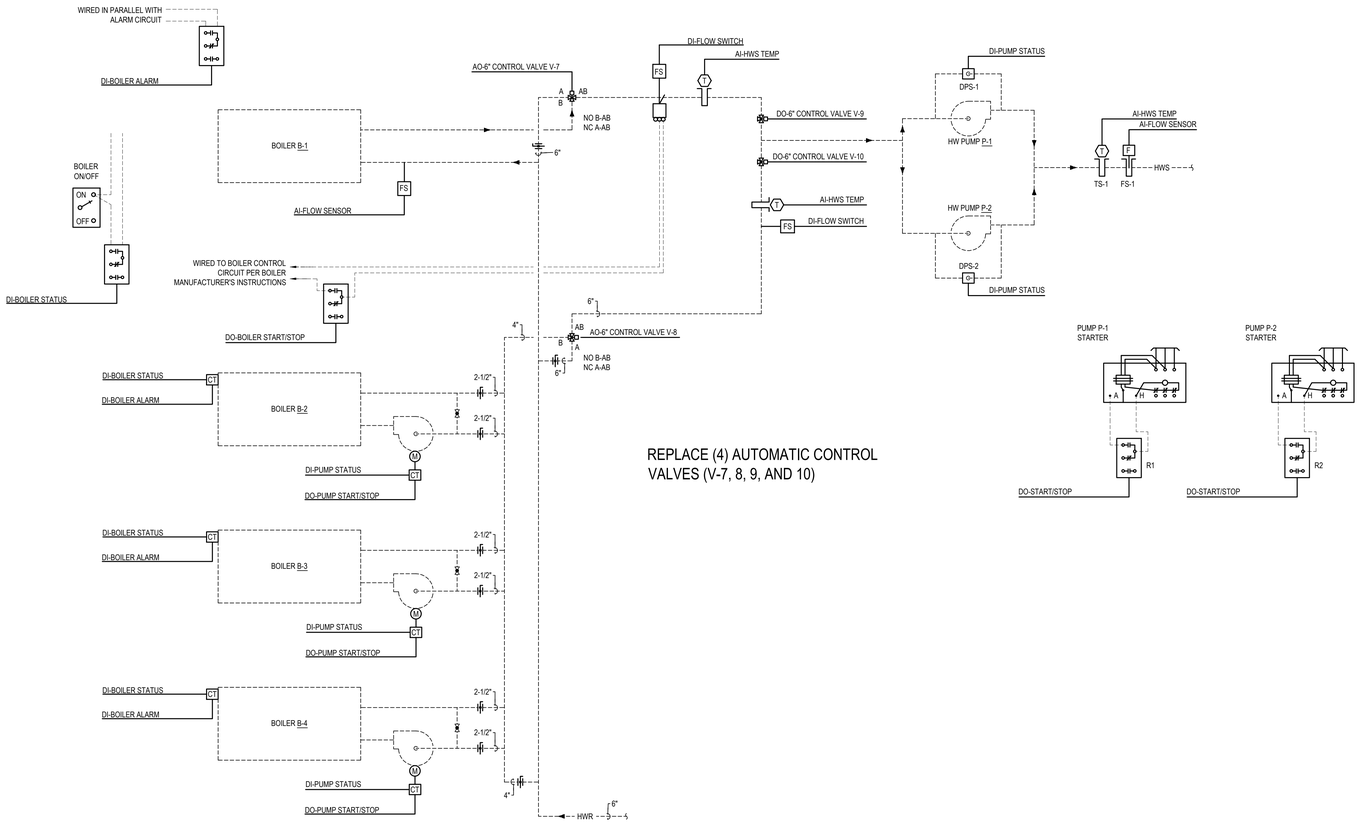
1.16.2023 2:58PM E:\2021.000.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M2-1-M2-7.dwg M2-3



1 DOMESTIC WATER BOOSTER PUMPS
NOT TO SCALE



2 DOMESTIC HOT WATER RETURN PUMPS
NOT TO SCALE



3 HEATING WATER SYSTEM
NOT TO SCALE

BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10011300, 10011502, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

CONTROL DIAGRAMS

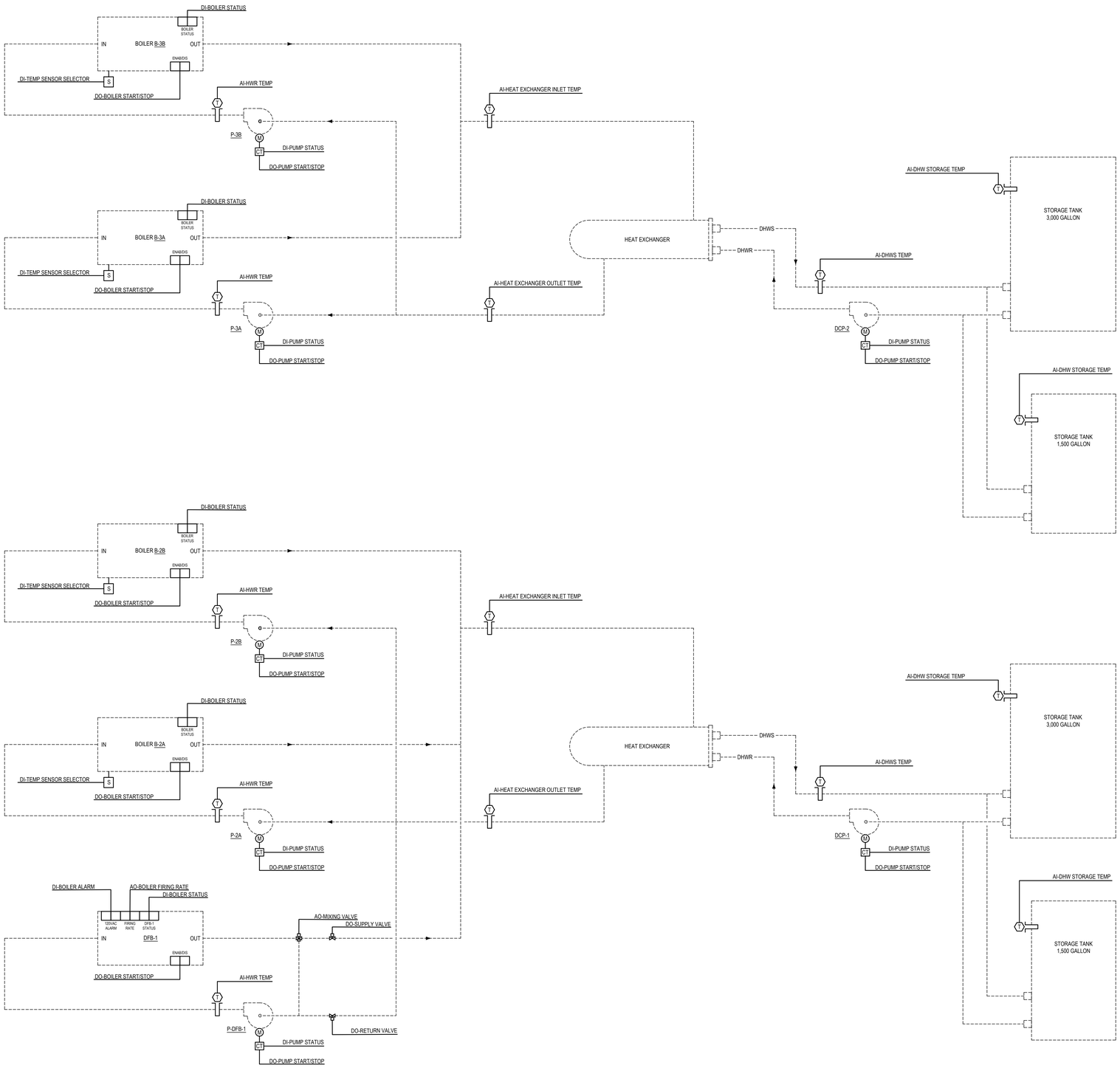
NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043		
DATE: 01/17/2023	DRAWN BY: EMS		
DESIGN BY: LRB	CHECKED BY: LRB		

SHEET
M2-4
SHEET 14 OF 20 M SHEETS TOTAL

1.16.2023 2:58PM E:\2021.000.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M2-14\M2-7.dwg M2-4



1 DOMESTIC WATER HEATING SYSTEM

NOT TO SCALE

BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44, #10017300, 10011502, #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

CONTROL DIAGRAMS

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M2-5
SHEET 15 OF 20 M SHEETS TOTAL

1.16.2023 2:59PM E:\2021.000.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M2-1-M2-7.dwg M2-5

I/O POINTS LIST FOR AHU-1E THRU 6E, AHU-1W THRU 6W

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Outside Air Damper		×							×		×
Outside Air Flow	×										×
Return Air Smoke Detector (Existing)			×						×	×	×
Return Air Temp	×								×		×
Return Air Humidity	×								×	×	×
Return Air Damper		×							×		×
Mixed Air Temp	×								×		×
Static Pressure Low Limit	×								×	×	×
Prefilter Differential Pressure	×								×		
Freezestat			×						×	×	×
Heating Valve		×							×		×
Cooling Valve		×							×		×
UV-Light Enable/Disable				×					×		×
UV-Light Status			×						×		×
Supply Fan Status			×						×		×
Supply Fan VFD Start/Stop				×					×		×
Supply Fan VFD Speed		×							×		×
Supply Fan VFD Fault			×							×	×
High Static Shutdown			×						×	×	×
Supply Air Smoke Detector (Existing)			×						×	×	×
Suply Air Temp	×								×		×
Supply Air Static Pressure	×								×	×	×
Zone Temp	×									×	×
Zone Fire Alarm Contact			×							×	×
Economizer Mixed Air Temp Setpoint					×				×		×
Outside Air Temp					×						×
Supply Air Static Pressure Setpoint					×				×		×
Supply Air Temp Setpoint					×				×		×
Emergency Shutdown						×			×	×	×
High Return Air Temp										×	
Low Return Air Temp										×	
High Mixed Air Temp										×	
Low Mixed Air Temp										×	
Prefilter Change Required										×	×
Supply Fan Failure										×	
Supply Fan in Hand										×	
Supply Fan Runtime Exceeded										×	
High Supply Air Static Pressure										×	
High Supply Air Temp										×	
Low Supply Air Temp										×	
Low Supply Air Static Pressure										×	
Totals	9	5	8	2	4	1	0	0	24	23	29

Total Hardware: 24 Total Software: 81

I/O POINTS LIST FOR AHU-10, 11, 13, 14

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Outside Air Damper		×							×		×
Outside Air Flow	×										×
Return Air Smoke Detector (Existing)			×						×	×	×
Return Air Temp	×								×		×
Return Air Damper		×							×		×
Mixed Air Temp	×								×		×
Static Pressure Low Limit	×								×	×	×
Prefilter Differential Pressure	×								×		
Freezestat			×						×	×	×
Heating Valve		×							×		×
Cooling Valve		×							×		×
UV-Light Enable/Disable				×					×		×
UV-Light Status			×						×		×
Supply Fan Status			×						×		×
Supply Fan VFD Start/Stop				×					×		×
Supply Fan VFD Speed		×							×		×
Supply Fan VFD Fault			×							×	×
High Static Shutdown			×						×	×	×
Supply Air Smoke Detector (Existing)			×						×	×	×
Suply Air Temp	×								×		×
Supply Air Static Pressure	×								×	×	×
Zone Fire Alarm Contact			×							×	×
Purge Control Dampers				×						×	×
Isolation Control Dampers				×						×	×
Economizer Mixed Air Temp Setpoint					×				×		×
Outside Air Temp					×						×
Supply Air Static Pressure Setpoint					×				×		×
Supply Air Temp Setpoint					×				×		×
Emergency Shutdown						×			×	×	×
High Return Air Temp										×	
Low Return Air Temp										×	
High Mixed Air Temp										×	
Low Mixed Air Temp										×	
Prefilter Change Required										×	×
Supply Fan Failure										×	
Supply Fan in Hand										×	
Supply Fan Runtime Exceeded										×	
High Supply Air Static Pressure										×	
High Supply Air Temp										×	
Low Supply Air Temp										×	
Low Supply Air Static Pressure										×	
Totals	7	5	8	4	4	1	0	0	23	23	29

Total Hardware: 24 Total Software: 80

I/O POINTS LIST FOR AHU-9

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Outside Air Damper		×							×		×
Outside Air Flow	×										×
Return Air Smoke Detector (Existing)			×						×	×	×
Return Air Temp	×								×		×
Return Air Damper		×							×		×
Mixed Air Temp	×								×		×
Static Pressure Low Limit	×								×	×	×
Prefilter Differential Pressure	×								×		
Freezestat			×						×	×	×
Heating Valve		×							×		×
Cooling Valve		×							×		×
UV-Light Enable/Disable				×					×		×
UV-Light Status			×						×		×
Supply Fan Status			×						×		×
Supply Fan VFD Start/Stop				×					×		×
Supply Fan VFD Speed		×							×		×
Supply Fan VFD Fault			×							×	×
High Static Shutdown			×						×	×	×
Supply Air Smoke Detector (Existing)			×						×	×	×
Suply Air Temp	×								×		×
Supply Air Static Pressure	×								×	×	×
Zone Fire Alarm Contact			×							×	×
Isolation Control Dampers				×						×	×
Economizer Mixed Air Temp Setpoint					×				×		×
Outside Air Temp					×						×
Supply Air Static Pressure Setpoint					×				×		×
Supply Air Temp Setpoint					×				×		×
Emergency Shutdown						×			×	×	×
High Return Air Temp										×	
Low Return Air Temp										×	
High Mixed Air Temp										×	
Low Mixed Air Temp										×	
Prefilter Change Required										×	×
Supply Fan Failure										×	
Supply Fan in Hand										×	
Supply Fan Runtime Exceeded										×	
High Supply Air Static Pressure										×	
High Supply Air Temp										×	
Low Supply Air Temp										×	
Low Supply Air Static Pressure										×	
Totals	7	5	8	3	4	1	0	0	23	22	28

Total Hardware: 23 Total Software: 78

I/O POINTS LIST FOR AHU-7E1, 8E1, 7W2, & 8W2

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Outside Air Damper		×							×		×
Outside Air Flow	×										×
Return Air Smoke Detector (Existing)			×						×	×	×
Return Air Temp	×								×		×
Return Air Humidity	×								×	×	×
Return Air Damper		×							×		×
Mixed Air Temp	×								×		×
Static Pressure Low Limit	×								×	×	×
Prefilter Differential Pressure	×								×		
Freezestat			×						×	×	×
Heating Valve		×							×		×
Cooling Valve		×							×		×
UV-Light Enable/Disable				×					×		×
UV-Light Status			×						×		×
Supply Fan Status			×						×		×
Supply Fan VFD Start/Stop				×					×		×
Supply Fan VFD Speed		×							×		×
Supply Fan VFD Fault			×							×	×
High Static Shutdown			×						×	×	×
Supply Air Smoke Detector (Existing)			×						×	×	×
Suply Air Temp	×								×		×
Supply Air Static Pressure	×								×	×	×
Zone Temp	×									×	×
Zone Fire Alarm Contact			×							×	×
Economizer Mixed Air Temp Setpoint					×				×		×
Outside Air Temp					×						×
Supply Air Static Pressure Setpoint					×				×		×
Supply Air Temp Setpoint					×				×		×
Emergency Shutdown						×			×	×	×
High Return Air Temp										×	
Low Return Air Temp										×	
High Mixed Air Temp										×	
Low Mixed Air Temp										×	
Prefilter Change Required										×	×
Supply Fan Failure										×	
Supply Fan in Hand										×	
Supply Fan Runtime Exceeded										×	
High Supply Air Static Pressure										×	
High Supply Air Temp										×	
Low Supply Air Temp										×	
Low Supply Air Static Pressure										×	
Totals	9	5	8	2	4	1	0	0	24	23	29

Total Hardware: 24 Total Software: 81

I/O POINTS LIST FOR (E) AHU-12

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Outside Air Damper (Existing)		×							×		×
Outside Air Flow (Existing)	×										×
Return Air Smoke Detector (Existing)			×						×	×	×
Return Air Damper		×							×		×
Mixed Air Temp	×								×		×
Static Pressure Low Limit	×								×	×	×
Prefilter Differential Pressure	×								×		
Freezestat			×						×	×	×
Heating Valve		×							×		×
Cooling Valve		×							×		×
UV-Light Enable/Disable				×					×		×
UV-Light Status			×						×		×
Supply Fan Status			×						×		×
Supply Fan VFD Start/Stop				×					×		×
Supply Fan VFD Speed		×							×		×
Supply Fan VFD Fault			×							×	×
High Static Shutdown			×						×	×	×
Suply Air Temp	×								×		×
Supply Air Static Pressure	×								×	×	×
Zone Temp	×									×	×
Zone Fire Alarm Contact			×							×	×
Economizer Mixed Air Temp Setpoint					×				×		×
Outside Air Temp					×						×
Supply Air Static Pressure Setpoint					×				×		×
Supply Air Temp Setpoint					×				×		×
Emergency Shutdown						×			×	×	×
High Mixed Air Temp										×	
Low Mixed Air Temp										×	
Prefilter Change Required										×	×
Supply Fan Failure										×	
Supply Fan in Hand										×	
Supply Fan Runtime Exceeded										×	
High Supply Air Static Pressure										×	
High Supply Air Temp										×	
Low Supply Air Temp										×	
Low Supply Air Static Pressure										×	
Totals	7	5	7	2	4	1	0	0	21	19	26

Total Hardware: 21 Total Software: 71

I/O POINTS LIST FOR AHU-7E2, 8E2, 7W1, & 8W1

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Outside Air Damper		×							×		×
Static Pressure Low Limit	×								×	×	×
Prefilter Differential Pressure	×								×		
Heating Valve		×							×		×
UV-Light Enable/Disable				×					×		×
UV-Light Status			×						×		×
Supply Fan Status			×						×		×
Supply Fan VFD Start/Stop				×					×		×
Supply Fan VFD Speed		×							×		×
Supply Fan VFD Fault			×							×	×
High Static Shutdown			×						×	×	×
Supply Air Smoke Detector (Existing)			×						×	×	×
Suply Air Temp	×								×		×
Supply Air Static Pressure	×								×	×	×
Supply Air Static Pressure Setpoint					×				×		×
Supply Air Temp Setpoint					×				×		×
Emergency Shutdown						×			×	×	×
Prefilter Change Required										×	×
Supply Fan Failure										×	
Supply Fan in Hand										×	
Supply Fan Runtime Exceeded										×	
High Supply Air Static Pressure										×	
High Supply Air Temp										×	
Low Supply Air Temp										×	
Low Supply Air Static Pressure										×	
Totals	4	3	5	2	2	1	0	0	16	14	17

Total Hardware: 14 Total Software: 50

I/O POINTS LIST FOR CHILLED WATER SYSTEM

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Chillers											
CH-1 Status			×						×		×
CH-1 Enable				×					×		×
CH-1 Failure										×	
CH-1 Running in Hand										×	
CH-1 Runtime Exceeded										×	
CH-1 Diff Pressure Condenser	×									×	×
CH-1 Diff Pressure Evaporator	×									×	×
CH-2 Status			×						×		×
CH-2 Enable				×					×		×
CH-2 Failure										×	
CH-2 Running in Hand										×	
CH-2 Runtime Exceeded										×	
CH-2 Diff Pressure Condenser	×									×	×
CH-2 Diff Pressure Evaporator	×									×	×
Primary Chilled Water System											
CHWP-6 Speed		×							×		×
CHWP-7 Speed		×							×		×
CHWP-8 Speed		×							×		×
CHWP-6 Status			×						×		×
CHWP-7 Status			×						×		×
CHWP-8 Status			×						×		×
CHWP-6 Fault				×						×	×
CHWP-7 Fault				×						×	×
CHWP-8 Fault				×						×	×
CHWP-6 Start/Stop				×					×		×
CHWP-7 Start/Stop				×					×		×
CHWP-8 Start/Stop				×					×		×
CHWP-6 Failure										×	
CHWP-7 Failure										×	
CHWP-8 Failure										×	
CHWP-6 Running in Hand										×	
CHWP-7 Running in Hand										×	
CHWP-8 Running in Hand										×	
V-5, 6 Cross Conn. Valves		×									
Secondary Chilled Water System											
Secondary CHW Diff. Pressure	×								×		×
Secondary CHW Diff. Setpoint					×						×
Secondary CHW Return Temp.	×								×		×
Secondary CHW Supply Temp.	×								×		×
Decoupler Flow	×								×		×
CHWS Flow	×								×		×
CHWP-3 Speed		×							×		×
CHWP-4 Speed		×							×		×
CHWP-5 Speed		×							×		×
CHWP-3 Status			×						×		×
CHWP-4 Status			×						×		×
CHWP-5 Status			×						×		×
CHWP-3 Fault				×						×	×
CHWP-4 Fault				×						×	×
CHWP-5 Fault				×						×	×
CHWP-3 Start/Stop				×					×		×
CHWP-4 Start/Stop				×					×		×
CHWP-5 Start/Stop				×					×		×
CHWP-3 Failure										×	
CHWP-4 Failure										×	
CHWP-5 Failure										×	
CHWP-3 Running in Hand										×	
CHWP-4 Running in Hand										×	
CHWP-5 Running in Hand										×	
High Secondary CHW Diff. Pressure										×	
Low Secondary CHW Diff. Pressure										×	
High Secondary CHW Water Supply Temp.										×	
Low Secondary CHW Water Supply Temp.										×	
Miscellaneous											
Outside Air Temp	×										
Refrigerant Monitoring System	×			×						×	
Mech. Room Exhaust Fan				×							
Mech. Room Vent. Damper				×							
Totals	11	7	8	17	1	0	0	0	27	33	38

Total Hardware: 43 Total Software: 99

I/O POINTS LIST FOR CHILLED WATER SYSTEM

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Condenser Water System											
CT-1 CWR Temp.	×								×		×
CT-2 CWR Temp.	×								×		×
CT-1 CWS Temp.	×								×		×
CT-2 CWS Temp.	×								×		×
CWP-9 Speed		×							×		×
CWP-10 Speed		×							×		×
CWP-11 Speed		×							×		×
CWP-9 Status			×						×		×
CWP-10 Status			×						×		×
CWP-11 Status			×						×		×
CWP-9 Fault				×						×	×
CWP-10 Fault				×						×	×
CWP-11 Fault				×						×	×
CWP-9 Start/Stop				×					×		×
CWP-10 Start/Stop				×					×		×
CWP-11 Start/Stop				×					×		×
CWP-9 Failure										×	
CWP-10 Failure										×	
CWP-11 Failure										×	
CWP-9 Running in Hand										×	
CWP-10 Running in Hand										×	
CWP-11 Running in Hand										×	
V-1, 2, 3, 4 Cross Conn. Valves		×									
CT-1 High CWR Temp.										×	
CT-2 High CWR Temp.										×	
CT-1 Low CWR Temp.										×	
CT-2 Low CWR Temp.										×	
CT-1 High CWS Temp.										×	
CT-2 High CWS Temp.										×	
CT-1 Low CWS Temp.										×	
CT-2 Low CWS Temp.										×	
Cooling Tower (Typ. Of 2)											
CT-1 Basin Water Temp.	×								×		×
CT-2 Basin Water Temp.	×								×		×
CT-1 Bypass Valve Output		×							×		×
CT-2 Bypass Valve Output		×							×		×
CT-1 Tower Isolation Valve		×							×		×
CT-2 Tower Isolation Valve		×							×		
CT-1 N/S Tower Fan Speed (2 each Tower)		×							×		×
CT-2 N/S Tower Fan Speed (2 each Tower)		×							×		×
CT-1 N/S Tower Fan Status (2 each Tower)			×						×		×
CT-2 N/S Tower Fan Status (2 each Tower)			×						×		×
CT-1 N/S Tower Fan Fault (2 each Tower)				×						×	×
CT-2 N/S Tower Fan Fault (2 each Tower)				×						×	×
CT-1 N/S Tower Fan Start/Stop (2 each Tower)				×					×		×
CT-2 N/S Tower Fan Start/Stop (2 each Tower)				×					×		×
CT-1 N/S Tower Fan Failure (2 each Tower)										×	
CT-2 N/S Tower Fan Failure (2 each Tower)										×	
CT-1 N/S Tower Fan Running in Hand (2 each Tower)										×	
CT-2 N/S Tower Fan Running in Hand (2 each Tower)										×	
CT-1 N/S Tower Fan Vibration Status (2 each Tower)			×						×	×	×
CT-2 N/S Tower Fan Vibration Status (2 each Tower)			×						×	×	×
CT-1 High Basin Water Level Switch			×						×	×	×
CT-2 High Basin Water Level Switch			×						×	×	×
CT-1 Low Basin Water Level Switch			×						×	×	×
CT-2 Low Basin Water Level Switch			×						×	×	×
Miscellaneous											
Outside Air Temp (DB)					×						
Outside Air Temp (WB)					×						
Totals	6	10	11	10	2	0	0	0	31	29	35

Total Hardware: 37 Total Software: 97

I/O POINTS LIST FOR AIR COOLED CHILLER SYSTEM

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Chiller											
ACC-1 CHS Temp Reset		×			×				×		×
ACC-1 Alarm			×							×	×
ACC-1 Start/Stop				×					×	×	×
ACC-1 Chiller kW	×								×	×	×
Chilled Water System											
PP-12 Status			×						×		×
PP-12 Start/Stop				×					×		×
CHR Temp	×								×		×
CHS Temp	×								×		×
CHS Flow Switch	×								×		×
PP-12 Failure										×	
High Chilled Water Supply Temp										×	
Low Chilled Water Supply Temp										×	
Totals	4	1	2	2	1	0	0	0	8	6	9

Total Hardware: 9 Total Software: 24

I/O POINTS LIST FOR HEATING WATER SYSTEM

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Boiler											
B-1 Start/Stop				×					×		×
B-1 Status			×						×		×
B-1 Alarm			×							×	×
B-2 Start/Stop				×					×		×
B-2 Status			×						×		×
B-2 Alarm			×							×	×
B-2 Circ Pump Start/Stop				×					×		×
B-2 Circ Pump Status			×							×	×
B-3 Start/Stop				×					×		×
B-3 Status			×						×		×
B-3 Alarm			×							×	×
B-3 Circ Pump Start/Stop				×					×		×
B-3 Circ Pump Status			×							×	×
B-4 Start/Stop				×					×		×
B-4 Status			×						×		×
B-4 Alarm			×							×	×
B-4 Circ Pump Start/Stop				×					×		×
B-4 Circ Pump Status			×							×	×
Heating Water System											
HWS Temp (Qty. 3)	×								×		×
HWS Flow Switch (Qty. 2)			×						×		×
HWS Flow Sensor	×								×		×
HWP-1 Start/Stop				×					×	×	×
HWP-2 Start/Stop				×					×	×	×
HWP-1 Status			×						×		×
HWP-2 Status			×						×		×
HWP-1 Failure										×	
HWP-2 Failure										×	
HWP-1 Running in Hand										×	
HWP-2 Running in Hand										×	
HWP-1 Runtime Exceeded										×	
HWP-2 Runtime Exceeded										×	
V-7 Control Valve		×									×
V-8 Control Valve		×									×
V-9 Control Valve				×							×
V-10 Control Valve				×							×
Miscellaneous											
Outside Air Temp	×										
Combustion Air Damper Operator				×							
Combustion Air Damper End Switch	×										
Totals	4	2	14	12	0	0	0	0	18	15	29

Total Hardware: 32 Total Software: 62

I/O POINTS LIST FOR DOMESTIC WATER HEATING SYSTEM

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Boiler											
DFB-1 Start/Stop				×					×		×
DFB-1 Status			×						×		×
DFB-1 Firing Rate		×							×		×
DFB-1 Alarm			×							×	×
DFB-1 Mixing Valve		×							×		×
DFB-1 Supply Valve				×					×		×
DFB-1 Return Valve				×					×		×
P-DFB-1 Start/Stop				×					×	×	×
P-DFB-1 Status			×						×		×
DFB-1 HWR Temp	×								×		×
B-2A Start/Stop				×					×	×	×
B-2A Status			×						×		×
B-2A Temp Sensor Selector			×						×		×
B-2A Heat Exchanger Outlet Temp	×								×		×
P-2A Start/Stop				×					×	×	×
P-2A Status			×						×		×
B-2A HWR Temp	×								×		×
B-2B Start/Stop				×					×	×	×
B-2B Status			×						×		×
B-2B Temp Sensor Selector			×						×		×
B-2B Heat Exchanger Outlet Temp	×								×		×
P-2B Start/Stop				×					×	×	×
P-2B Status			×						×		×
B-2B HWR Temp	×								×		×
B-3A Start/Stop				×					×	×	×
B-3A Status			×						×		×
B-3A Temp Sensor Selector			×						×		×
B-3A Heat Exchanger Outlet Temp	×								×		×
P-3A Start/Stop				×					×	×	×
P-3A Status			×						×		×
B-3A HWR Temp	×								×		×
B-3B Start/Stop				×					×	×	×
B-3B Status			×						×		×
B-3B Temp Sensor Selector			×						×		×
B-3B Heat Exchanger Outlet Temp	×								×		×
P-3B Start/Stop				×					×	×	×
P-3B Status			×						×		×
B-3B HWR Temp	×								×		×
Storage Tanks											
DFB-1, 2A, 2B DHWS Temp	×								×		×
Storage Tank Temp	×										×
Storage Tank Temp	×										×
DCP-1 Start/Stop				×					×	×	×
DCP-1 Status			×						×		×
3A, 3B DHWS Temp	×								×		×
Storage Tank Temp	×										×
Storage Tank Temp	×										×
DCP-2 Start/Stop				×					×	×	×
DCP-2 Status			×						×		×
Miscellaneous											
Totals	15	2	17	14	0	0	0	0	43	12	48

Total Hardware: 48 Total Software: 103

I/O POINTS LIST FOR DOMESTIC HOT WATER RETURN PUMPS

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
HWRP-1											
Pump Control Panel P-1 Start/Stop				×					×		×
Pump Control Panel P-2 Start/Stop				×					×		×
Pump Control Panel P-1 Alarm Status			×							×	×
Pump Control Panel P-2 Alarm Status			×							×	×
Totals	0	0	2	2	0	0	0	0	2	2	4

Total Hardware: 4 Total Software: 8

I/O POINTS LIST FOR DOMESTIC WATER BOOSTER PUMPS

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
P-1 Pump Status			×						×		×
P-2 Pump Status			×						×		×
P-3 Pump Status			×						×		×
P-4 Pump Status			×						×		×
Pump Control Panel Start/Stop				×					×		×
Pump Control Panel Alarm Status			×							×	×
P-1 Failure										×	
P-2 Failure										×	
P-3 Failure										×	
P-4 Failure										×	
Totals	0	0	5	1	0	0	0	0	5	5	6

Total Hardware: 6 Total Software: 16

BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridglea Place, Suite 700 Fort Worth, TX 76116
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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

CONTROL POINT LISTS

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M2-6
SHEET 16 OF 20 M SHEETS TOTAL

1.16.2023 2:58PM E:\2021.000-2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M2-1-M2-7.dwg M2-6

I/O POINTS LIST FOR STAIRWELL PRESSURIZATION FANS (SPF-1, 2, & 3)

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Fire Stat			×							×	×
Prefilter Differential Pressure (SPF-3 Only)	×								×		
Supply Fan Status			×						×		×
Fan Start/Stop				×							×
Fan VFD Speed		×									×
Fan Fault			×								×
Zone Fire Alarm Contact			×							×	×
Supply Fan Alarm										×	×
Totals	1	1	4	1	0	0	0	0	2	3	7

Total Hardware: 7 Total Software: 12

I/O POINTS LIST FOR EXHAUST FANS

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Fire Stat			×							×	×
Fan Status			×								×
Fan Start/Stop				×							×
Exhaust Fan Alarm										×	×
Totals	0	0	2	1	0	0	0	0	0	2	4

Total Hardware: 3 Total Software: 6

I/O POINTS LIST FOR TOILET EXHAUST FANS

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Fire Stat			×							×	×
Exhaust Static Pressure	×								×	×	×
Fan Status			×							×	×
Fan Start/Stop				×							×
Exhaust Static Pressure Setpoint					×				×		×
High Exhaust Static Pressure					×						
Low Exhaust Static Pressure					×						
Exhaust Fan Alarm										×	×
Totals	1	0	2	1	3	0	0	0	2	4	6

Total Hardware: 4 Total Software: 15

I/O POINTS LIST FOR SMOKE PURGE FANS (SEF-1 THRU 8)

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Chase Static Pressure	×								×	×	×
Fan Status			×								×
Fan Start/Stop				×							×
Fan VFD Speed		×									×
Fan Fault			×								×
Exhaust Static Pressure Setpoint					×				×		×
High Exhaust Static Pressure					×						
Low Exhaust Static Pressure					×						
Fire Alarm Panel Activation						×					×
Exhaust Fan Alarm										×	×
Totals	1	1	2	1	3	1	0	0	2	2	8

Total Hardware: 5 Total Software: 16

I/O POINTS LIST FOR HOLDING CELL SMOKE PURGE FANS (PSF-HC & PEF-HC)

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Fan Status			×								×
Fan Start/Stop				×							×
Fire Alarm Panel Activation						×					×
Exhaust Fan Alarm										×	×
Totals	0	0	1	1	0	1	0	0	0	1	4

Total Hardware: 2 Total Software: 6

I/O POINTS LIST FOR SINGLE DUCT VAV BOX - ELECTRIC REHEAT

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Supply Air Flow	×										×
Zone Damper		×							×		×
Heater Start/Stop			×						×		×
Supply Air Temp	×								×		×
Return Air Temp	×								×		×
Supply Air Temp Setpoint					×				×		×
High Supply Air Temp										×	
Low Supply Air Temp										×	
High Return Air Temp										×	
Totals	3	1	1	0	1	0	0	0	5	3	6

Total Hardware: 5 Total Software: 15

I/O POINTS LIST FOR SINGLE DUCT VAV BOX - HYDRONIC REHEAT

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Zone Damper		×							×		×
Heating Valve		×							×		×
Supply Air Temp	×								×		×
Zone Temp	×									×	×
Supply Air Temp Setpoint					×				×		×
High Supply Air Temp										×	
Low Supply Air Temp										×	
Totals	2	2	0	0	1	0	0	0	4	3	5

Total Hardware: 4 Total Software: 13

I/O POINTS LIST FOR SINGLE DUCT VAV BOX - COOLING ONLY

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Supply Air Flow	×										×
Zone Damper		×							×		×
Zone Temp	×									×	×
Supply Air Temp Setpoint					×				×		×
High Supply Air Temp										×	
Low Supply Air Temp										×	
Totals	2	1	0	0	1	0	0	0	2	3	4

Total Hardware: 3 Total Software: 10

I/O POINTS LIST FOR FAN POWERED VAV BOX - ELECTRIC REHEAT

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Zone Damper		×							×		×
Fan Status			×							×	×
Fan Start/Stop				×							×
Heater Start/Stop			×						×		×
Zone Temp	×									×	×
Zone Temp Setpoint					×				×		×
Zone High Temp										×	
Zone Low Temp										×	
Totals	1	1	2	1	1	0	0	0	3	4	6

Total Hardware: 5 Total Software: 14

I/O POINTS LIST FOR FAN POWERED VAV BOX - HYDRONIC REHEAT

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Zone Damper		×							×		×
Fan Status			×							×	×
Fan Start/Stop				×							×
Heating Valve		×							×		×
Zone Temp	×									×	×
Zone Temp Setpoint					×				×		×
Zone High Temp										×	
Zone Low Temp										×	
Totals	1	2	1	1	1	0	0	0	3	4	6

Total Hardware: 5 Total Software: 14

I/O POINTS LIST FOR FAN POWERED VAV BOX - COOLING ONLY

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Zone Damper		×							×		×
Fan Status			×							×	×
Fan Start/Stop				×							×
Zone Temp	×									×	×
Zone Temp Setpoint					×				×		×
Zone High Temp										×	
Zone Low Temp										×	
Totals	1	1	1	1	1	0	0	0	2	4	5

Total Hardware: 4 Total Software: 12

I/O POINTS LIST FOR FAN COIL UNITS - ECM MOTORS

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Cooling Valve		×							×		×
Float Switch			×							×	×
Fan Status			×						×	×	×
Fan Motor Control		×							×		×
Space Temp	×									×	×
Space Temp Setpoint					×				×		×
Space High Temp										×	
Space Low Temp										×	
Totals	1	2	2	0	1	0	0	0	4	5	6

Total Hardware: 5 Total Software: 16

I/O POINTS LIST FOR FAN COIL UNITS

Point Name	Hardware Points				Software Points						Show On Graphic
	AI	AO	DI	DO	AV	DV	Loop	Sched	Trend	Alarm	
Fan Start/Stop				×							×
Space Temp	×									×	×
Space Temp Setpoint					×				×		×
Space High Temp										×	
Space Low Temp										×	
Totals	1	0	0	1	1	0	0	0	1	3	3

Total Hardware: 2 Total Software: 8

BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com - 817.338.1277 • bhbinc.com
TBPE Firm #44; #10011300; 10011502; #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

CONTROL POINT LISTS

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

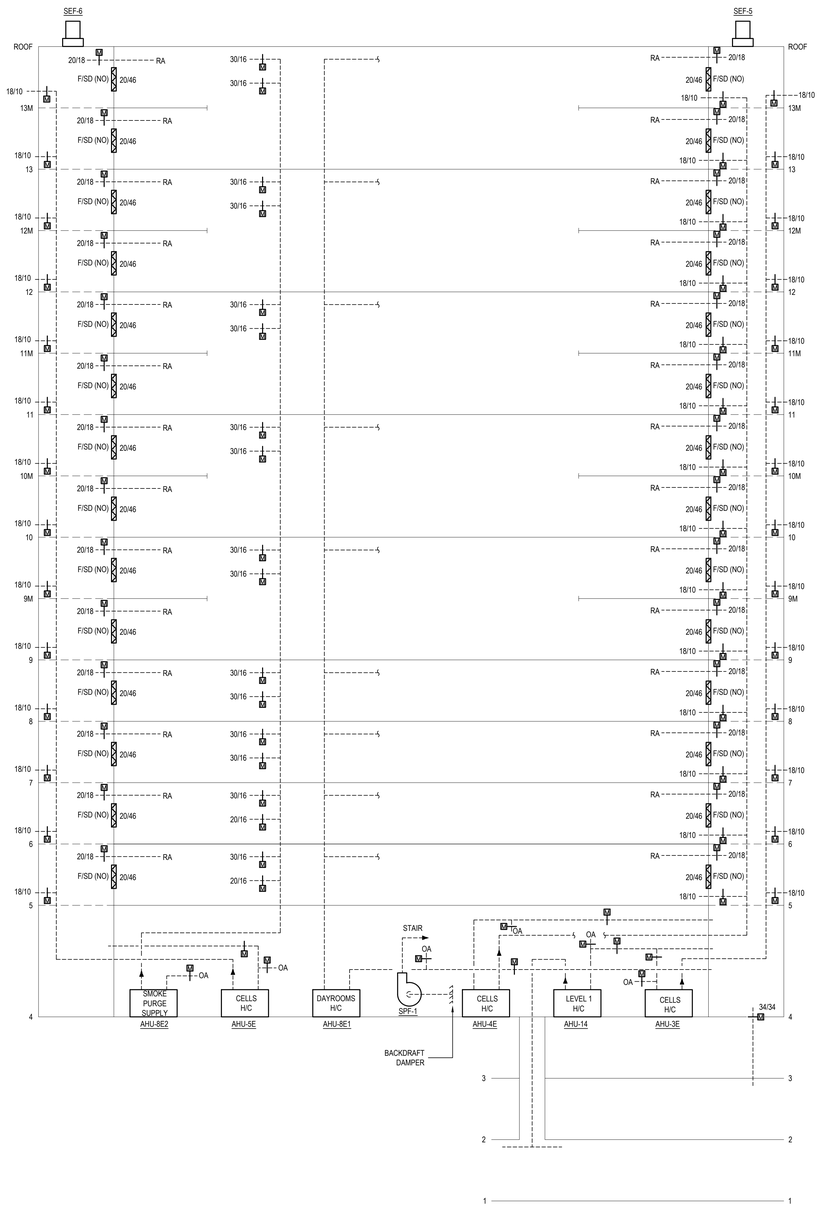
PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M2-7
SHEET 17 OF 20 M SHEETS TOTAL

1.16.2023 2:59PM E:\2021.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M2-1-M2-7.dwg M2-7

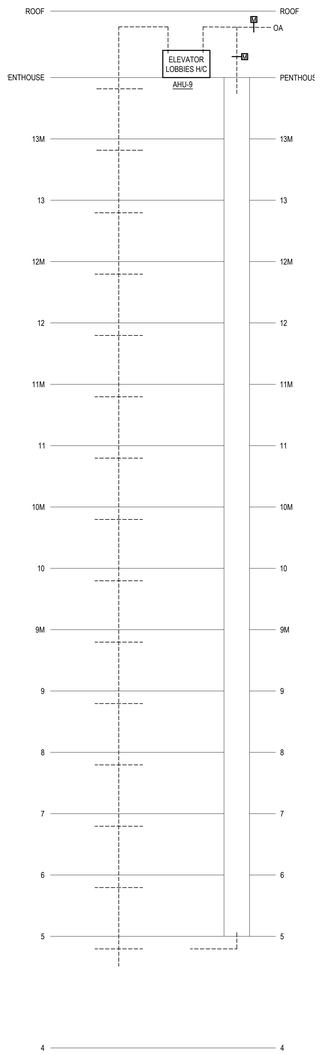
SHEET NOTES:

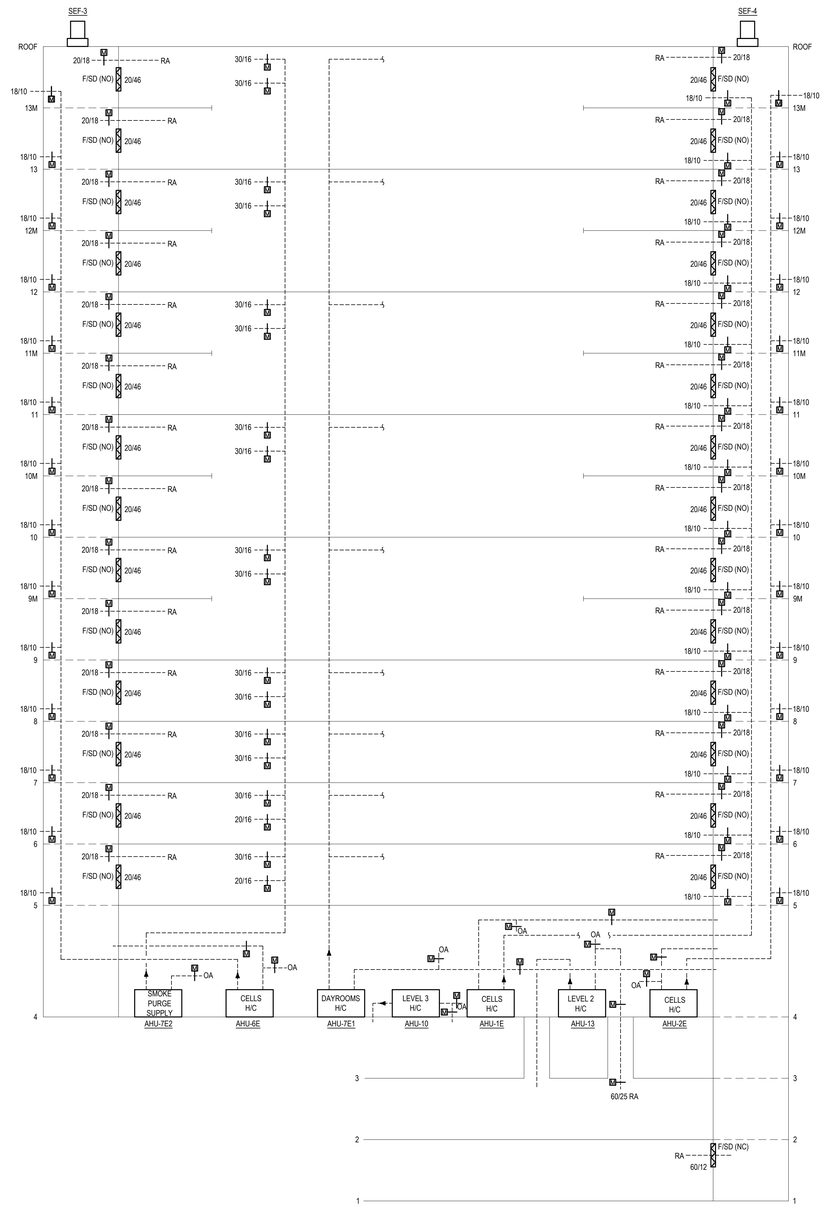
1. CONFIRM EXACT SIZE OF ALL DAMPERS. SOME SIZES INDICATED MAY BE SHEET METAL DUCT SIZE AND SOME SIZES MAY BE FREE AIR SIZES FOR LINED DUCTS.
2. ALL COMBINATION F/SD DAMPERS SHALL BE UL555 AND UL5555 LISTED.
3. ALL SD DAMPERS AND ALL MOTORIZED DAMPERS (EXCEPT FOR O/A DUCTS) SHALL BE UL5555 LISTED.



1 M3-1 QUADRANT B - AHU RISER DIAGRAM

NOT TO SCALE

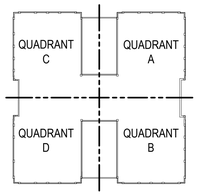




2 M3-1 QUADRANT A - AHU RISER DIAGRAM

NOT TO SCALE

KEY PLAN



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engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
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TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

AHU RISER DIAGRAMS

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

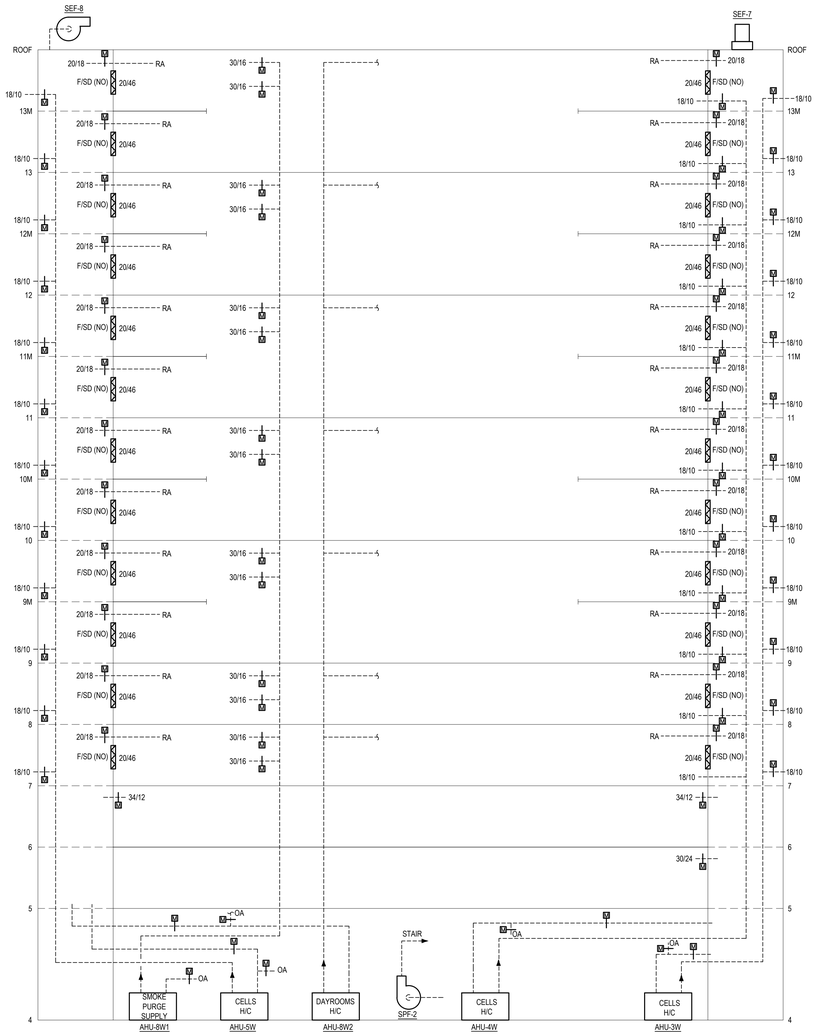
PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M3-1
SHEET 18 OF 20 M SHEETS TOTAL

1.16.2023 3:05PM E:\2021.000,000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M3-1-M3-2.dwg M3-1

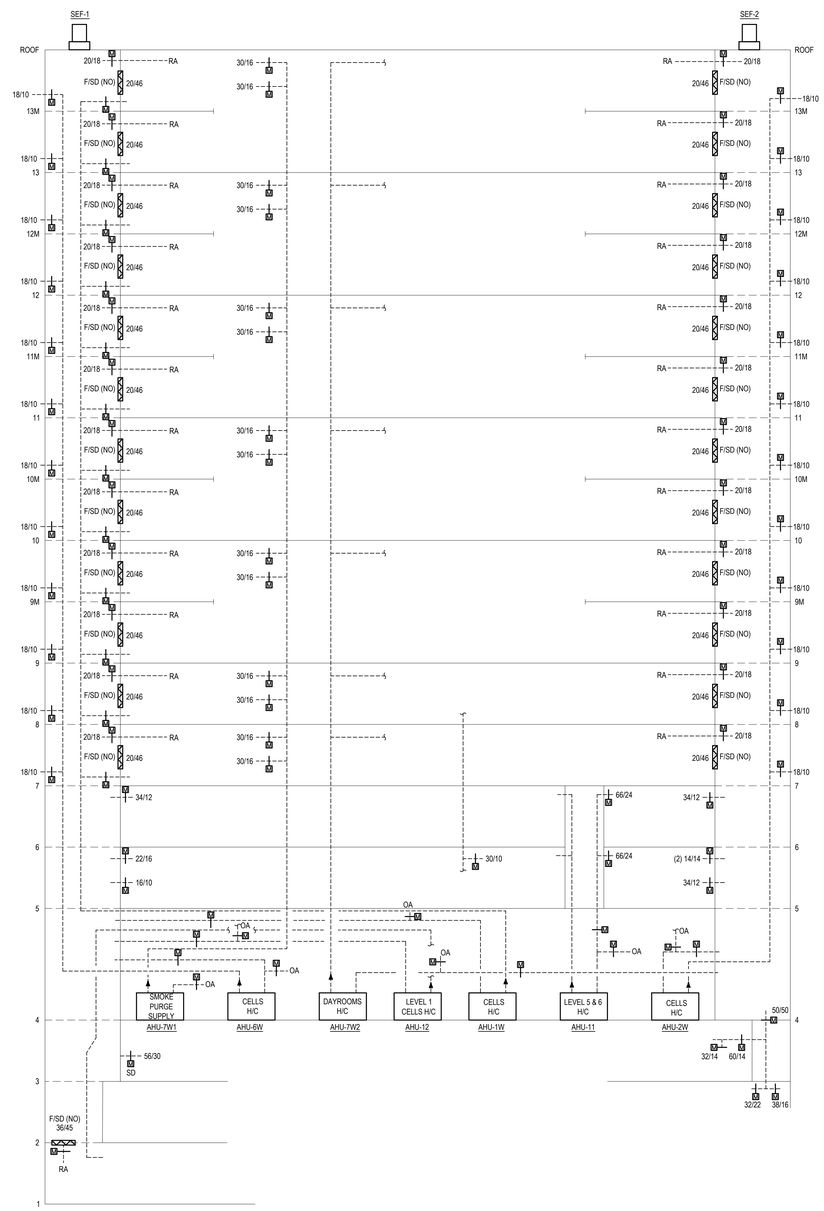
SHEET NOTES:

1. CONFIRM EXACT SIZE OF ALL DAMPERS. SOME SIZES INDICATED MAY BE SHEET METAL DUCT SIZE AND SOME SIZES MAY BE FREE AIR SIZES FOR LINED DUCTS.
2. ALL COMBINATION F/SD DAMPERS SHALL BE UL555 AND UL5555 LISTED.
3. ALL SD DAMPERS AND ALL MOTORIZED DAMPERS (EXCEPT FOR O/A DUCTS) SHALL BE UL5555 LISTED.



1 M3-2 QUADRANT D - AHU RISER DIAGRAM

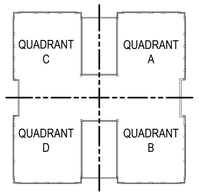
NOT TO SCALE



2 M3-2 QUADRANT C - AHU RISER DIAGRAM

NOT TO SCALE

KEY PLAN



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engineering and surveying
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mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44; #10011300; 10011302; #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

AHU RISER DIAGRAMS

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
LICENSED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043
DATE: 01/17/2023	DRAWN BY: EMS
DESIGN BY: LRB	CHECKED BY: LRB

SHEET
M3-2
SHEET 19 OF 20 M SHEETS TOTAL

1.17.2023 4:06PM E:\2021.000\.000\2021.010.xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M3-1-M3-2.dwg M3-2

EXISTING AIR TERMINAL UNITS

TAG	CFM DESIGN	CFM PRIMARY MIN.	CFM PURGE	S.P. (IN. OF WTR.)	PURGE S.P. (IN. OF WTR.)	REMARKS
(E) VAV-1-01	250	75	-	0.30	-	-
(E) VAV-1-02	1,110	330	-	0.30	-	-
(E) VAV-1-03	250	75	-	0.30	-	-
(E) VAV-1-04	1,535	460	-	0.30	-	-
(E) VAV-1-05	375	115	-	0.30	-	-
(E) VAV-1-06	800	240	-	0.30	-	-
(E) VAV-1-07	1,600	480	-	0.30	-	-
(E) VAV-1-08	740	225	-	0.30	-	-
(E) VAV-1-09	740	225	-	0.30	-	-
(E) VAV-1-10	1,600	480	-	0.30	-	-
(E) VAV-1-11	450	135	-	0.30	-	-
(E) VAV-1-13	400	120	-	0.30	-	-
(E) VAV-1-15	935	280	-	0.30	-	-
(E) VAV-1-16	450	135	-	0.30	-	-
(E) VAV-2-06	409	120	-	0.30	-	-
(E) VAV-2-07	360	110	1,146	0.30	1.00	-
(E) VAV-2-11	396	120	-	0.30	-	-
(E) VAV-2-12	200	60	1,232	0.30	1.20	-
(E) VAV-2-16	377	115	-	0.30	-	-
(E) VAV-2-17	600	180	-	0.30	-	-
(E) VAV-2-18	900	270	-	0.30	-	-
(E) VAV-2-19	171	50	-	0.30	-	-
(E) VAV-2-20	1,027	310	-	0.30	-	-
(E) VAV-2-22	346	105	-	0.30	-	-
(E) VAV-2-25	789	235	1,309	0.30	1.50	-
(E) VAV-2-27	485	145	3,036	0.30	2.00	-
(E) VAV-3-03	175	50	-	0.30	-	-
(E) VAV-3-04	175	50	-	0.30	-	-
(E) VAV-3-05	175	50	-	0.30	-	-
(E) VAV-3-06	775	330	-	0.30	-	-
(E) VAV-3-07	220	65	-	0.30	-	-
(E) VAV-3-09	200	60	-	0.30	-	-
(E) VAV-3-10	800	240	-	0.30	-	-
(E) VAV-3-12	600	180	-	0.30	-	-
(E) VAV-3-14	700	210	-	0.30	-	-
(E) VAV-3-15	600	180	-	0.30	-	-
(E) VAV-3-16	1,040	310	2,605	0.30	1.50	-
(E) VAV-3-17	300	300	-	0.30	-	-
(E) VAV-3-18	275	85	-	0.30	-	-
(E) VAV-3-19	110	50	-	0.30	-	-
(E) VAV-3-25	610	185	1,926	0.30	1.50	-
(E) VAV-3-26	470	140	-	0.30	-	-
(E) VAV-3-28	1,000	300	-	0.30	-	-
(E) VAV-3-30	95	30	-	0.30	-	-
(E) VAV-3-35	100	30	-	0.30	-	-
(E) VAV-5-03	520	155	-	0.30	-	-
(E) VAV-5-05	450	135	-	0.30	-	-
(E) VAV-5-07	480	145	-	0.30	-	-
(E) VAV-5-09	420	125	1,149	0.30	1.50	-
(E) VAV-5-10	250	75	-	0.30	-	-
(E) VAV-5-12	440	135	-	0.30	-	-
(E) VAV-5-13	255	80	760	0.30	1.50	-
(E) VAV-5-15	780	235	-	0.30	-	-
(E) VAV-5-18	380	115	-	0.30	-	-
(E) VAV-5-19	750	225	3,465	0.30	2.00	-
(E) VAV-5-21	300	90	-	0.30	-	-
(E) VAV-5-23	200	60	-	0.30	-	-
(E) VAV-6-04	895	270	-	0.30	-	-
(E) VAV-6-05	796	240	-	0.30	-	-
(E) VAV-6-08	600	600	-	0.30	-	-
(E) VAV-6-12	300	90	-	0.30	-	-
(E) VAV-7-01	295	90	-	0.30	-	-
(E) VAV-7-02	295	90	-	0.30	-	-
(E) VAV-8-01	295	90	-	0.30	-	-
(E) VAV-8-02	295	90	-	0.30	-	-
(E) VAV-9-01	740	225	-	0.30	-	-
(E) VAV-10-01	740	225	-	0.30	-	-
(E) VAV-11-01	740	225	-	0.30	-	-
(E) VAV-12-01	740	225	-	0.30	-	-
(E) VAV-13-01	740	225	-	0.30	-	-

NOTES:

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EXISTING AIR TERMINAL UNITS (HYDRONIC RE-HEAT COIL)

TAG	CFM DESIGN	CFM PRIMARY MIN.	CFM PURGE	S.P. (IN. OF WTR.)	PURGE S.P. (IN. OF WTR.)	HEATING COIL E.A.T. (°F)	HEATING COIL E.W.T. (°F)	HEATING COIL L.W.T. (°F)	HEATING COIL MIN. CAP (BTUH)	HEATING COIL GPM	HEATING COIL MAX. P.D. (FT. OF WTR.)	FAN MIN. CFM	FAN EXT. S.P.	FAN MAX. HP	FAN VOLT / PHASE	REMARKS
(E) VAV-1-12	1,090	330	-	0.35	-	63	180	140	8,000	0.50	5.0	-	-	-	-	-
(E) VAV-1-14	505	150	-	0.30	-	63	180	140	3,600	0.20	5.0	-	-	-	-	-
(E) VAV-2-01	713	215	2,111	0.30	1.50	54	180	140	14,151	0.71	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-02	911	275	1,744	0.30	1.50	54	180	140	16,198	0.81	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-03	894	270	2,198	0.30	1.50	54	180	140	16,027	0.80	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-04	611	185	2,096	0.30	1.50	54	180	140	13,128	0.65	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-05	430	130	1,804	0.30	1.50	54	180	140	11,253	0.56	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-08	784	235	2,010	0.30	1.50	54	180	140	14,834	0.74	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-09	768	230	3,220	0.30	2.00	54	180	140	14,663	0.73	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-10	708	215	2,969	0.30	2.00	54	180	140	14,152	0.71	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-14	768	230	3,220	0.30	1.50	54	180	140	14,663	0.73	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-15	128	40	-	0.30	-	52	180	140	1,452	0.07	5.0	-	-	-	-	-
(E) VAV-2-21	624	190	2,617	0.30	1.50	54	180	140	13,299	0.67	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-23	385	115	-	0.30	-	52	180	140	4,175	0.21	5.0	-	-	-	-	-
(E) VAV-2-24	658	200	-	0.30	-	54	180	140	13,640	0.68	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-2-26	380	115	-	0.30	-	52	180	140	19,778	0.99	5.0	-	-	-	-	-
(E) VAV-2-28	485	145	-	0.30	-	54	180	140	13,981	0.70	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-01	300	90	-	0.40	-	54	180	140	3,069	0.15	5.0	-	-	-	-	-
(E) VAV-3-02	300	90	-	0.30	-	54	180	140	3,069	0.15	5.0	-	-	-	-	-
(E) VAV-3-08	250	75	-	0.30	-	54	180	140	2,558	0.13	5.0	-	-	-	-	-
(E) VAV-3-11	410	125	-	0.30	-	56	180	140	10,368	0.52	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-13	1,100	330	-	0.30	-	56	180	140	27,302	1.40	5.0	400	0.25	1/8	115 / 1	-
(E) VAV-3-20	885	265	-	0.30	-	56	180	140	14,834	0.74	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-21	200	60	-	0.30	-	54	180	140	2,064	0.10	5.0	-	-	-	-	-
(E) VAV-3-22	240	72	-	0.30	-	54	180	140	2,455	0.12	5.0	-	-	-	-	-
(E) VAV-3-23	450	150	-	0.30	-	52	180	140	11,165	0.56	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-24	530	160	-	0.40	-	56	180	140	11,484	0.56	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-27	490	150	-	0.30	-	54	180	140	11,165	0.56	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-29	250	75	-	0.30	-	54	180	140	2,558	0.13	5.0	-	-	-	-	-
(E) VAV-3-31	100	30	-	0.30	-	54	180	140	1,023	0.05	5.0	-	-	-	-	-
(E) VAV-3-32	859	257	2,642	0.30	2.00	56	180	140	14,578	0.73	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-33	360	110	1,636	0.30	1.50	56	180	140	9,889	0.49	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-3-34	648	195	-	0.30	-	56	180	140	12,600	0.63	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-01	1,230	370	4,694	0.30	2.00	55	180	140	22,110	1.11	5.0	300	0.25	1/8	115 / 1	-
(E) VAV-5-02	1,770	1,770	4,062	0.30	2.00	53	180	140	62,304	3.12	5.0	-	-	-	-	-
(E) VAV-5-04	835	250	-	0.30	-	55	180	140	14,850	0.74	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-06	305	90	-	0.30	-	55	180	140	5,445	0.27	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-08	460	140	-	0.30	-	55	180	140	11,220	0.23	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-11	1,200	230	4,536	0.30	2.00	55	180	140	21,780	1.09	5.0	300	0.25	1/8	115 / 1	-
(E) VAV-5-14	1,675	500	-	0.40	-	55	180	140	26,400	1.32	5.0	300	0.25	1/8	115 / 1	-
(E) VAV-5-16	680	205	2,005	0.30	2.00	55	180	140	13,365	0.67	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-17	564	170	2,695	0.30	2.00	55	180	140	12,210	0.61	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-19	750	225	3,465	0.30	2.00	55	180	140	14,025	0.70	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-20	500	150	2,250	0.30	2.00	55	180	140	11,550	0.58	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-5-22	160	50	-	0.30	-	53	180	140	1,936	0.10	5.0	-	-	-	-	-
(E) VAV-6-01	1,040	310	-	0.30	-	55	180	140	16,830	0.84	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-6-02	1,050	315	-	0.30	-	55	180	140	16,995	0.85	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-6-03	370	110	-	0.30	-	55	180	140	10,230	0.51	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-6-06	825	250	-	0.30	-	55	180	140	14,850	0.74	5.0	200	0.25	1/15	115 / 1	-
(E) VAV-6-07	1,500	450	-	0.30	-	55	180	140	24,750	1.24	5.0	300	0.25	1/8	115 / 1	-
(E) VAV-6-09	1,680	505	-	0.40	-	55	180	140	26,750	1.33	5.0	300	0.25	1/8	115 / 1	-
(E) VAV-6-10	2,000	600	-	0.50	-	55	180	140	27,700	1.49	5.0	300	0.25	1/8	115 / 1	-
(E) VAV-6-11	2,000	600	-	0.50	-	55	180	140	29,700	1.49	5.0	300	0.25	1/8	115 / 1	-
(E) VAV-6-13	160	50	-	0.30	-	53	180	140	1,760	0.09	5.0	-	-	-	-	-

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EXISTING AIR TERMINAL UNITS (ELECTRIC RE-HEAT COIL)

TAG	CFM DESIGN	CFM MAX.	CFM MIN.	EXT. S.P. (IN. OF WTR.)	ELECTRIC HEATING COIL HEAT CFM	FAN CFM	FAN HP	HEATER KW	L.A.T. (°F)	VOLTS / PHASE	REMARKS
(E) VAV-1-17	1225	1500	240	0.50	1040	800	1/4	-	-	277 / 1	-
(E) VAV-1-18	900	1050	165	0.50	675	400	1/6	5.0	95	208 / 3	-
(E) VAV-1-19	420	675	105	0.50	420	-	-	5.0	95	208 / 3	-
(E) VAV-1-20	430	375	60	0.50	300	-	-	-	-	208 / 3	-
(E) VAV-1-21	640	675	105	0.50	640	-	-	8.0	95	208 / 3	-
(E) VAV-1-22	465	675	105	0.50	440	-	-	5.5	95	208 / 3	-
(E) VAV-1-23	835	1050	165	0.50	820	-	-	10.0	95	208 / 3	-
(E) VAV-1-24	1525	1600	240	0.50	1040	800	1/4	9.0	95	208 / 3	-
(E) VAV-1-25	410	675	105	0.50	440	-	-	5.5	95	208 / 3	-
(E) VAV-1-26	440	675	105	0.50	440	-	-	5.5	95	208 / 3	-
(E) VAV-1-27	325	375	60	0.50	325	-	-	4.0	95	208 / 3	-
(E) VAV-1-28	560	675	105	0.50	405	300	1/6	3.5	95	208 / 3	-

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EXISTING FAN COIL UNITS

TAG	BLOWER CFM	BLOWER EXT. S.P.	BLOWER HP	BLOWER VOLTS / PHASE	COOLING COIL SENS. (MBH)	COOLING COIL TOTAL (MBH)	COOLING COIL E.A.T. Db (°F)	COOLING COIL E.A.T. Wb (°F)	COOLING COIL E.W.T. (°F)	COOLING COIL GPM	COOLING COIL MAX. P.D. (FT. OF WTR.)	REMARKS
(E) FCU-7-1	300	0.2	1/3	115 / 1	8	8.5	76.0	62.0	43.0	2.0	10.1	-
(E) FCU-8-1	300	0.2	1/3	115 / 1	8	8.5	76.0	62.0	43.0	2.0	10.1	-
(E) FCU-9-1	300	0.2	1/3	115 / 1	8	8.5	76.0	62.0	43.0	2.0	10.1	-
(E) FCU-10-1	300	0.2	1/3	115 / 1	8	8.5	76.0	62.0	43.0	2.0	10.1	-
(E) FCU-11-1	300	0.2	1/3	115 / 1	8	8.5	76.0	62.0	43.0	2.0	10.1	-
(E) FCU-12-1	300	0.2	1/3	115 / 1	8	8.5	76.0	62.0	43.0	2.0	10.1	-
(E) FCU-13-1	300	0.2	1/3	115 / 1	8	8.5	76.0	62.0	43.0	2.0	10.1	-

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BAIRD, HAMPTON & BROWN
engineering and surveying
6300 Ridgea Place, Suite 700 Fort Worth, TX 76116
mail@bhbinc.com • 817.338.1277 • bhbinc.com
TBPE Firm #44; #1001300; 10015902; #10194146

TARRANT COUNTY CORRECTIONS CENTER
BUILDING AUTOMATION SYSTEM
REPLACEMENT PROJECT
100 N LAMAR STREET FORT WORTH, TEXAS 76102

MECHANICAL SCHEDULES

NO.	DESCRIPTION	DATE

STATE OF TEXAS
LESLIE R. BROWN
60171
REGISTERED PROFESSIONAL ENGINEER
1/17/23

PROJECT NUMBER:	2021.010.043		
DATE: 01/17/2023	DRAWN BY:	EMS	
DESIGN BY: LRB	CHECKED BY: LRB		

SHEET
M4-1
SHEET 20 OF 20 M SHEETS TOTAL

1.16.2023 2:37PM E:\2021.000\.0000\2021.010\xxx - Tarrant County Projects\2021.010.043 - Tarr Co Corr Ctr Controls Replace\01 Design & Drafting\06 Mech\M4-1.dwg M4-1