



ADDENDUM NO. 04 November 1, 2022

To Drawings and Specifications dated October 10, 2022.

BALES INTERMEDIATE AND WESTWOOD ELEMENTARY RENOVATIONS ISSUE FOR PROPOSAL FOR FRIENDSWOOD I.S.D.

Prepared by: PBK

11 Greenway Plaza, 22nd Floor Houston, TX 77046-1104

PBK Project No: 220083

Notice to Bidders

A. Receipt of this Addendum shall be acknowledged on the Bid Form.

B. This Addendum forms part of the Contract documents for the above referenced project and shall be incorporated integrally therewith.

C. Each bidder shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.

DRAWINGS

MECHANICAL

Item No 01 Sheet - M-501 - MECHANICAL DETAILS (BALES)

A. Replace sheet in it entirety.

Item No 02 Sheet - M-101B - 1ST FLOOR MECHANICAL PLAN - AREA B (WESTWOOD)

A. Replace sheet in it entirety.

Item No 03 Sheet - M-101C - 1ST FLOOR MECHANICAL PLAN - AREA C (WESTWOOD)

A. Replace sheet in it entirety.

Item No 04 Sheet - M-101E - 1ST FLOOR MECHANICAL PLAN - AREA E (WESTWOOD)

A. Replace sheet in it entirety.

Item No 05 Sheet - M-101F - 1ST FLOOR MECHANICAL PLAN - AREA F (WESTWOOD)

A. Replace sheet in it entirety.

Attachments include 5 additional sheets ending with sheet M-101F dated November 1, 2022.



MODULAR CENTRAL-STATION AIR-HANDLING UNIT SCHEDULE **BLOWER DATA COOLING COIL DATA** HEATING COIL DATA MANUFACTURER | MODEL | DIMENSIONS (L x W x H) INCHES | OPERATING WEIGHT (LBS.) | SEE NOTE OUTSIDE AIR CFM DESIGNATION SERVICE TYPE ARRANGEMENT TOTAL CFM SET. EXT. SP. (IN. WG.) MAX. ALLOWABLE TOTAL BRAKE H.P. NOTOR QTY / MAX. MOTOR QTY / MAX. MOTOR QTY / MAX. MOTOR HP (EACH) VARIABLE FREQUENCY DRIVE HP TYPE VOLTAGE CFM OVER COIL MAX. FACE VELOCITY (FPM) TOTAL BTUH EAT (°F DB) LAT (°F DB) LAT (°F DB) LAT (°F DB) VALVE CONFIGURATION MAX MIN AHU-01 | CLASSROOMS | SD VAV | VERTICAL DRAW-THRU | CARRIER | 39MN 1-9 15,980 3,125 938 84" x 105" x 120" 24.50 BELT - FC AHU-02 | CLASSROOMS | SD VAV | VERTICAL DRAW-THRU | CARRIER | 39MN 5,300 1-9 14,250 3,125 938 19.70 1 / 20.0 BELT - FC 14,250 550 55°F 2-WAY 84" x 105" x 120" 2.5" 245,120 523,920 80.7°F 68.0°F 55°F 108.6 45°F 1-9 7,550 1,315 395 AHU-05 | CLASSROOMS | SD VAV | VERTICAL DRAW-THRU | 72" x 73" x 92" BELT - FC 7,550 55°F CARRIER 39MN 12.50 1 / 15.0 550 67.4°F 55°F 51.7 3-WAY 183,160 272,750 80.2°F

BELT - FC

BELT - FC

4,760

4,780

8,910

550

550

1 / 5.0

1 / 5.0

1 / 15.0

. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL CHARACTERISTICS.

KITCHEN SZ CV VERTICAL DRAW-THRU

CAFETERIA SZ CV VERTICAL DRAW-THRU CARRIER 39MN

AHU-10 | ADMIN AREA | SD VAV | VERTICAL DRAW-THRU | CARRIER | 39MN

- ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH DUCTWORK, AIR DEVICES, SOUND ATTENUATORS, ETC.
- . AIR HANDLING UNIT INTERNAL STATIC PRESSURE SHALL INCLUDE LOSSES THROUGH COILS, CASING & INTERNAL DAMPERS.

CARRIER 39MN

. COOLING COILS SHALL HAVE A MINIMUM OF 6 ROWS AND A MAXIMUM OF 10 FINS PER INCH. PRESSURE DROP THROUGH COIL SHALL NOT EXCEED 15 FT. AT SCHEDULED GPM.

60" x 68" x 78"

60" x 68" x 78"

72" x 78" x 98"

- . PROVIDE VARIABLE FREQUENCY DRIVE.
- 3. UNITS WITH MULTIPLE FANS AND MOTORS, PROVIDE FACTORY INSTALLED AND WIRED MOTOR OVERLOAD PANEL FOR CONNECTION TO A SINGLE VFD.
- PROVIDE FACTORY MOUNTED AND WIRED EXTERNAL JUNCTION BOXES ON FAN SECTION. J-BOX SHALL ALLOW ELECTRICAL CONTRACTOR TO LAND POWER TO DEVICE WITHOUT PENETRATING THROUGH CABINET. FIELD INSTALLED JUNCTION BOXES ARE NOT ACCEPTABLE.

3,500

- PROVIDE FACTORY MOUNTED SHAFT GROUNDING KIT FOR AIR HANDLING UNIT MOTOR, NO EXCEPTIONS.
- PROVIDE WITH ANGLED FILTERS AND PERMANANT METAL FILTER FRAMES WITH MAXIMUM 2" THICK MERV 13 FILTER MEDIA.

			DIFFUSERS, REGISTERS & GRILLES SCHEDULE
DESIGNATION	MODEL NUMBER	NOISE CRITERIA (NC)	DESCRIPTION
А	TITUS TDCA-FR	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION. PROVIDE WITH FACTORY MOUNTED FIRE DAMPER AND THERMAL INSULATING BLANKET.
В	TITUS PAR-FR	25	24x24 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION. PROVIDE WITH FACTORY MOUNTED FIRE DAMPER AND THERMAL INSULATING BLANKET.
С	TITUS 300RS	25	DOUBLE DEFLECTION, 3/4" BLADE SPACING, FRONT BLADES PARALLEL TO SHORT DIMENSION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONTSTRUCTION.
D	TITUS 350RL	25	3/4" BLADE SPACING, FRONT BLADES PARALLEL TO LONG DIMENSION, 35° FIXED DEFLECTION, NO OPPOSED BLADE DAMPER, SURFACE MOUNTING BORDER TYPE WITH COUNTERSUNK HOLES, ALL STEEL CONSTRUCTION.
Е	TITUS TDCA-FR	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 18"x18" NECK SIZE WITH ROUND DUCT CONNECTION SIZED AS INDICATED ON PLANS. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION. PROVIDE WITH FACTORY MOUNTED FIRE DAMPER AND THERMAL INSULATING BLANKET.
F	TITUS PAR-FR	25	12x12 MODULE SIZE, LAY-IN BORDER TYPE, 22"x22" NECK SIZE UNLESS NOTED OTHERWISE. NO OPPOSED BLADE DAMPER, ALL STEEL CONSTRUCTION. PROVIDE WITH FACTORY MOUNTED FIRE DAMPER AND THERMAL INSULATING BLANKET.
	•	•	

1-9 4,760 770 231

1-9 4,780 910 273

1-9 8,910 1,260 378

1.3"

2.9"

4.40

14.90

1. ALL DIFFUSER DESIGNATIONS MAY NOT BE USED ON PROJECT.

- 2. DIFFUSERS IN NATATORIUMS, SHOWER ROOMS, ADJACENT DRESSING ROOMS, DISHWASH ROOMS, AND THERAPY POOL ROOMS SHALL BE ALL ALUMINUM CONSTRUCTION.
- 3. PROVIDE ROTO-TWIST CABLE OPERATED DAMPERS AT IN GYP BOARD CEILINGS.

					HV	AC FANS S	CHEDULE								
PERIONETIAN	LOCATION	050)405	MANUEACTURER	MODEL NUMBER	NOTES	MEIGHTS (LDS)		CONTROL				FAN DATA			
DESIGNATION	LOCATION	SERVICE	MANUFACTURER	MODEL NUMBER	NOTES	WEIGHTS (LBS)	LOCALLY SWITCHED	INTERLOCK TO RUN WITH	TYPE	DRIVE	CFM	STATIC PRESSURE (" W.G.)	MOTOR HP. (MIN.)	RPM (MAX.)	VOLT / Ø / HZ
<u>EF-01</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	AHU-02	CENTRIFUGAL	DIRECT	655	0.50	1/4	1,725	120 / 1 / 60
<u>EF-02</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-02</u>	CENTRIFUGAL	DIRECT	655	0.50	1/4	1,725	120 / 1 / 60
<u>EF-03</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-03</u>	CENTRIFUGAL	DIRECT	700	0.50	1/4	1,725	120 / 1 / 60
<u>EF-04</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-03</u>	CENTRIFUGAL	DIRECT	655	0.50	1/4	1,725	120 / 1 / 60
<u>EF-05</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-08</u>	CENTRIFUGAL	DIRECT	500	0.50	1/10	1,725	120 / 1 / 60
<u>EF-06</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-03</u>	CENTRIFUGAL	DIRECT	630	0.75	1/4	1,725	120 / 1 / 60
<u>EF-07</u>	ROOF	KILN HOOD	GREENHECK	CUE	1-5,8	300	LOCAL SWITCH	-	CENTRIFUGAL	DIRECT	430	0.60	1/10	1,725	120 / 1 / 60
<u>EF-08</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-05</u>	CENTRIFUGAL	DIRECT	580	0.50	1/6	1,725	120 / 1 / 60
<u>EF-09</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-10</u>	CENTRIFUGAL	DIRECT	235	0.50	1/10	1,725	120 / 1 / 60
<u>EF-10</u>	ROOF	RESTROOMS	GREENHECK	CUE	1-5,8	300	-	<u>AHU-06</u>	CENTRIFUGAL	DIRECT	185	0.50	1/10	1,725	120 / 1 / 60
<u>EF-11</u>	ROOF	KITCHEN HOOD	GREENHECK	CUBE	1-6,8	300	HOOD SWITCH	-	CENTRIFUGAL	DIRECT	1,875	1.50	2	2,520	460 / 3 / 60
<u>EF-12</u>	ROOF	DISHWASHER HOOD	GREENHECK	CUE	1-5,8	300	-	DISHWASHER	CENTRIFUGAL	DIRECT	875	1.00	1/2	1,725	120 / 1 / 60
<u>EF-13</u>	ROOF	KITCHEN HOOD	GREENHECK	CUBE	1-6,8	300	HOOD SWITCH	-	CENTRIFUGAL	DIRECT	1,875	1.50	2	2,520	460 / 3 / 60
<u>EF-14</u>	ROOF	IDF ROOM	GREENHECK	CUE	1-5,7,8	300	T-STAT	-	CENTRIFUGAL	DIRECT	125	0.50	1/6	1,725	120 / 1 / 60

. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.

- . REFERENCE SPECIFICATIONS FOR SEQUENCE OF OPERATIONS.
- . REFERENCE ARCHITECTURAL DRAWINGS FOR ROOF CURB DETAIL.
- . PROVIDE ROOF MOUNTED FAN AND DESIGNED TO WITHSTAND HIGH WIND SPEEDS UP TO 155 MPH.
- 5. FAN SHALL BE PROVIDED WITH GREENHECK VARI-GREEN® CONTROL AND ECM MOTOR. STARTER SHALL BE PROVIDED BY FAN MANUFACTURER. JUNCTION BOX AND VARI-GREEN TRANSFORMER SHALL BE FACTORY MOUNTED AND WIRED.
- 6. KITCHEN EXHAUST FAN TO BE INTERLOCKED WITH ASSOCIATED KITCHEN HOOD.
- . INTERLOCK FAN WITH THERMOSTAT SET TO 80° (ADJUSTABLE)

3. PROVIDE WITH FACTORY MOUNTED DISCONNECT SWITCH.

9. PROVIDE WITH ALUMINUM WASHABLE FILTER.

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	DESIGNATION	SERVICE	ТҮРЕ	NOTES	GPM	HEAD (FT. H20)	EFFICIENCY	RPM (MAX.)	B.H.P.	MOTOR H.P.	MANUFACTURER	MODEL NUMBER	MINIMUM NPSHR (FT.)
-	<u>SHWP-01</u>	BUILDING LOOP	SPLIT COUPLED VERTICAL IN-LINE	1-4	167	90'	64%	1,800	6.81	7 1/2	AURORA / PENTAIR	382B-SC	12.650
						-							

REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.

- IMPELLER SHALL NOT EXCEED 85% OF CUTWATER DIAMETER.
- . PUMP CURVE SHALL HAVE A MINIMUM OF 8 PSI DIFFERENTIAL BETWEEN 65% OF DESIGN FLOW AND 100% OF DESIGN FLOW.
- PROVIDE VARIABLE FREQUENCY DRIVE FOR SOFT START AND BALANCING PURPOSES.

						EXISTING AIR HANDL	ING UNIT SCHED	JLE		
				T		CHILLED WATER CO	IL		HEATING WATER CO	IL
DESIGNATION	NOTES	CFM	OUTSIDE AIR CFM	H.P.	GPM	2-WAY OR 3-WAY CONTROL VALVE	PIPE SIZE (INCHES)	GPM	2-WAY OR 3-WAY CONTROL VALVE	PIPE SIZE (INCHES)
AHU-3	1,2	7,775	1,425	5	46.9	2-WAY	2	12.3	3-WAY	1 1/4
AHU-4	1,2	1,670	240	2	9.6	2-WAY	1 1/4	1.9	3-WAY	3/4
AHU-8	1,2	9,000	2,425	15	73.6	3-WAY	2 1/2	-	-	-
AHU-9	1,2	6,940	1,160	5	40.0	2-WAY	2	13.7	3-WAY	1 1/4

1. EXISTING DATA IS FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING DATA PRIOR TO BID DATE.

55°F 26.2

55°F 44.0 45°F

197,830 275,970 77.8°F 65.5°F

45°F

55°F

55°F

2-WAY

2-WAY

4,760

4,780

55,270 65°F

75°F 5.5 160°F

140°F

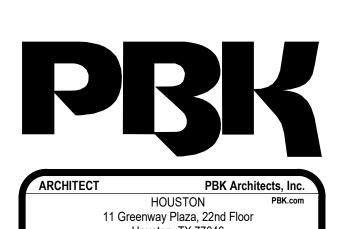
140°F

2-WAY

2. REMOVE EXISTING CONTROL VALVE AND REPLACE WITH NEW. UPGRADE TO FULL NEW DDC CONTROL SYSTEM.

EVAPORATOR SECTION	
INDOOR EVAPORATOR DESIGNATION	FCU-C8
SERVICE	MDF ROOM
MANUFACTURER	LG
MODEL NUMBER	LHN
ТҮРЕ	DUCTED
WEIGHT (LBS.)	200
NOTES	1-9
FAN DATA	
SUPPLY CFM (HIGH / MEDIUM / LOW) SPEED	1,000
EXTERNAL STATIC PRESSURE, "WG	0.3
COOLING / HEATING COIL	DX
NOMINAL TONNAGE	3.0 TONS
ENTERING AIR EVAP (DB/WB) °F - COOLING MODE	80°F / 67°F
ENTERING AIR EVAP (DB/WB) °F - HEATING MODE	70°F / 60°F
TOTAL BTUH COOLING	36,000
TOTAL BTUH HEATING	40,000
AIR-COOLED CONDENSER	
DESIGNATION	ACCU-C8
SERVES	FCU-C8
LOCATION	ROOF
MANUFACTURER	LG
MODEL NUMBER	LUU
EFFICIENCY (SEER)	19.0
VOLTS/PH/HZ	208 / 1 / 60
MCA	32.0
МОСР	40
REFRIGERANT	R-410A
AMBIENT TEMPERATURE °F	95°F

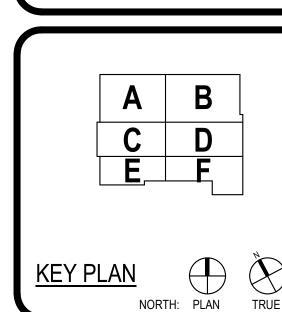
- I. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA.
- 2. ESTIMATED EXTERNAL STATIC PRESSURE INCLUDES LOSSES THROUGH PLENUM, AIR DEVICES, ETC.
- 3. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 4. PROVIDE REMOTE WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH BACnet INTERFACE.
- 5. PROVIDE INVERTER DRIVEN COMPRESSOR.
- B. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT. INTERCONNECTING POWER WIRING FROM OUTDOOR TO INDOOR UNIT
- IS BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS.
- PROVIDE MATCHING CONDENSING UNIT FROM SAME MANUFACTURER.
- MANUFACTURER SHALL PROVIDE A CONDENSATE PUMP. PUMP SHALL BE POWERED BY THE UNIT AND SHALL NOT START / STOP
- UNLESS THE UNIT IS ENERGIZED / DE-ENERGIZED.
- 9. UNIT SHALL BE RATED FOR 155 MPH WIND SPEED.

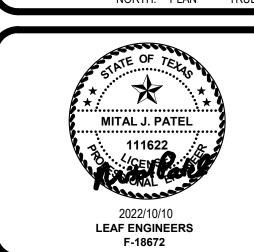


Houston, TX 77046 713-965-0608 P 713-961-4571 F TX Firm: BR 1608 STRUCTURAL KUBALA ENGINEERS





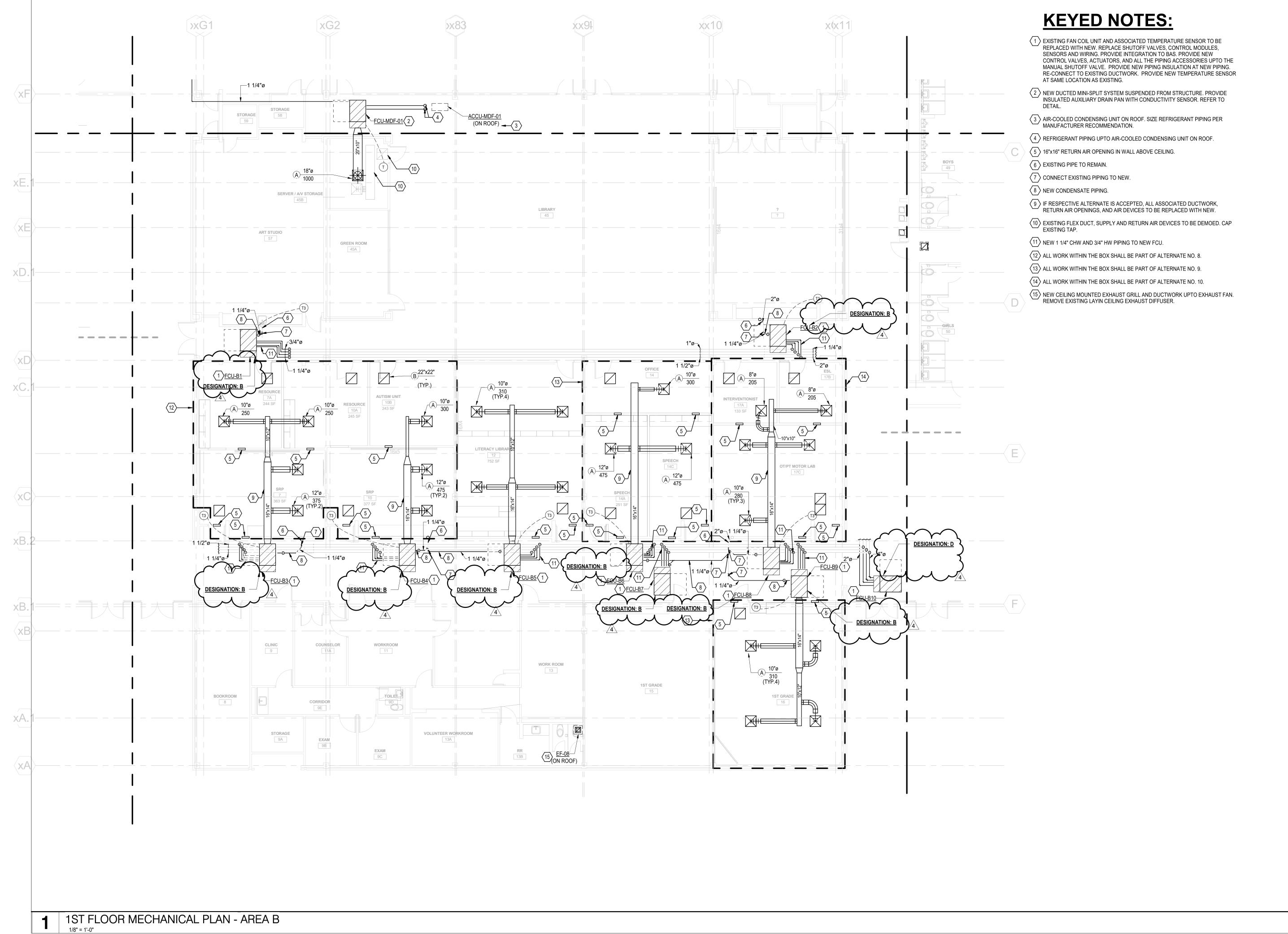




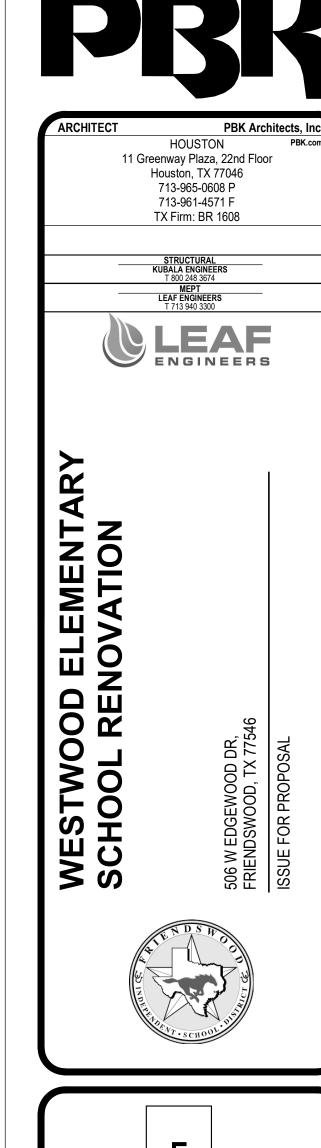
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4	ADDENDUM 4		11/01/2022
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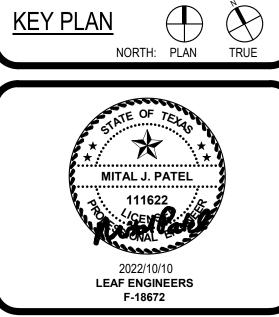
MECHANICAL SCHEDULES





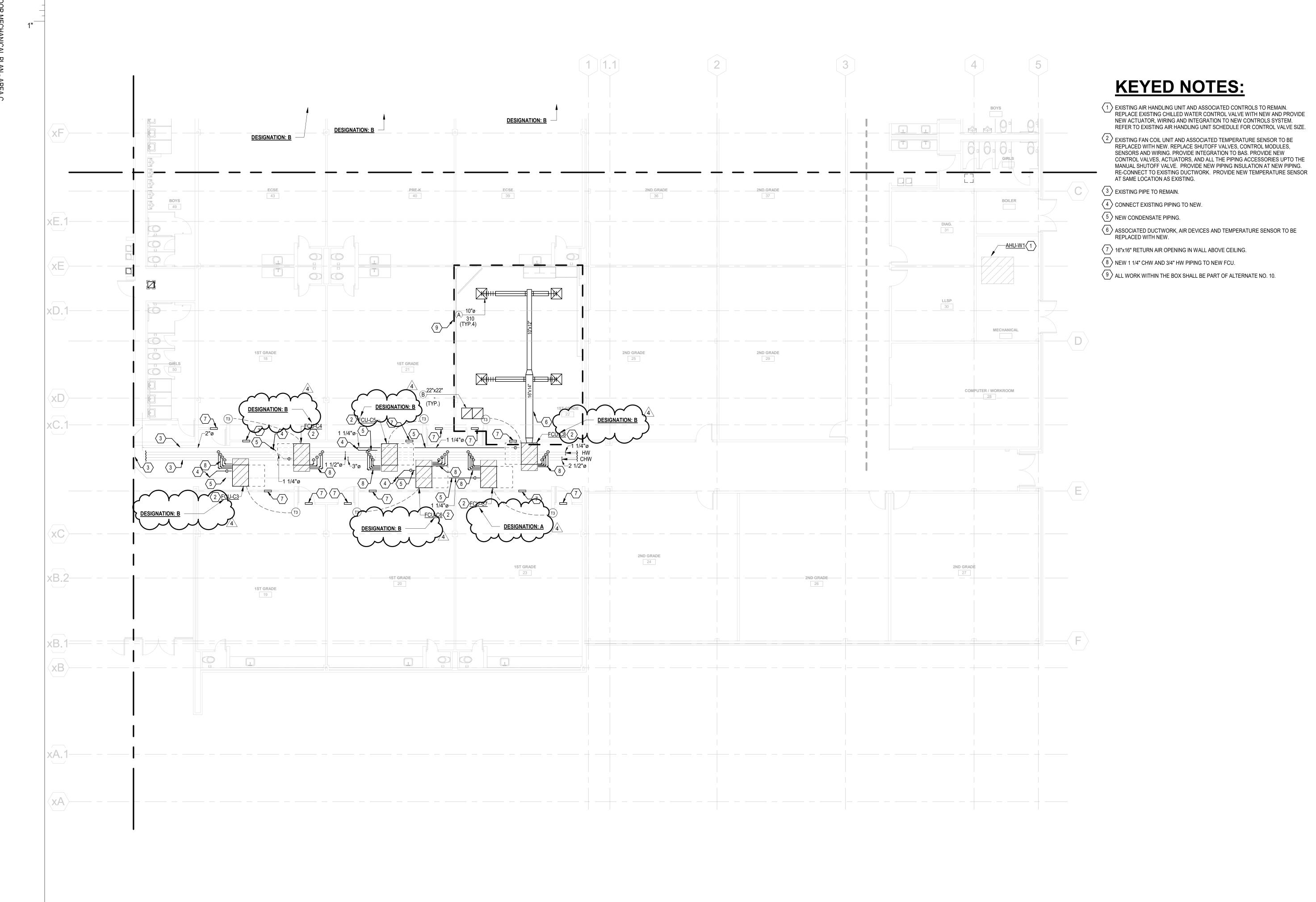






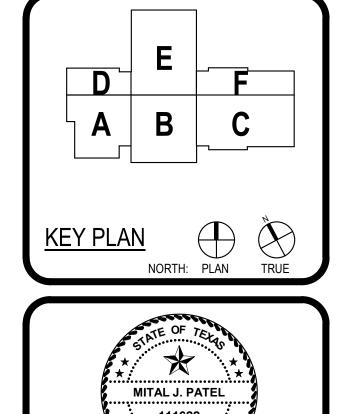
DRAWING HISTORY No. Description 1 ADDENDUM 1 10/2 4 ADDENDUM 4 11/0
1 ADDENDUM 1 10/24
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AREA B





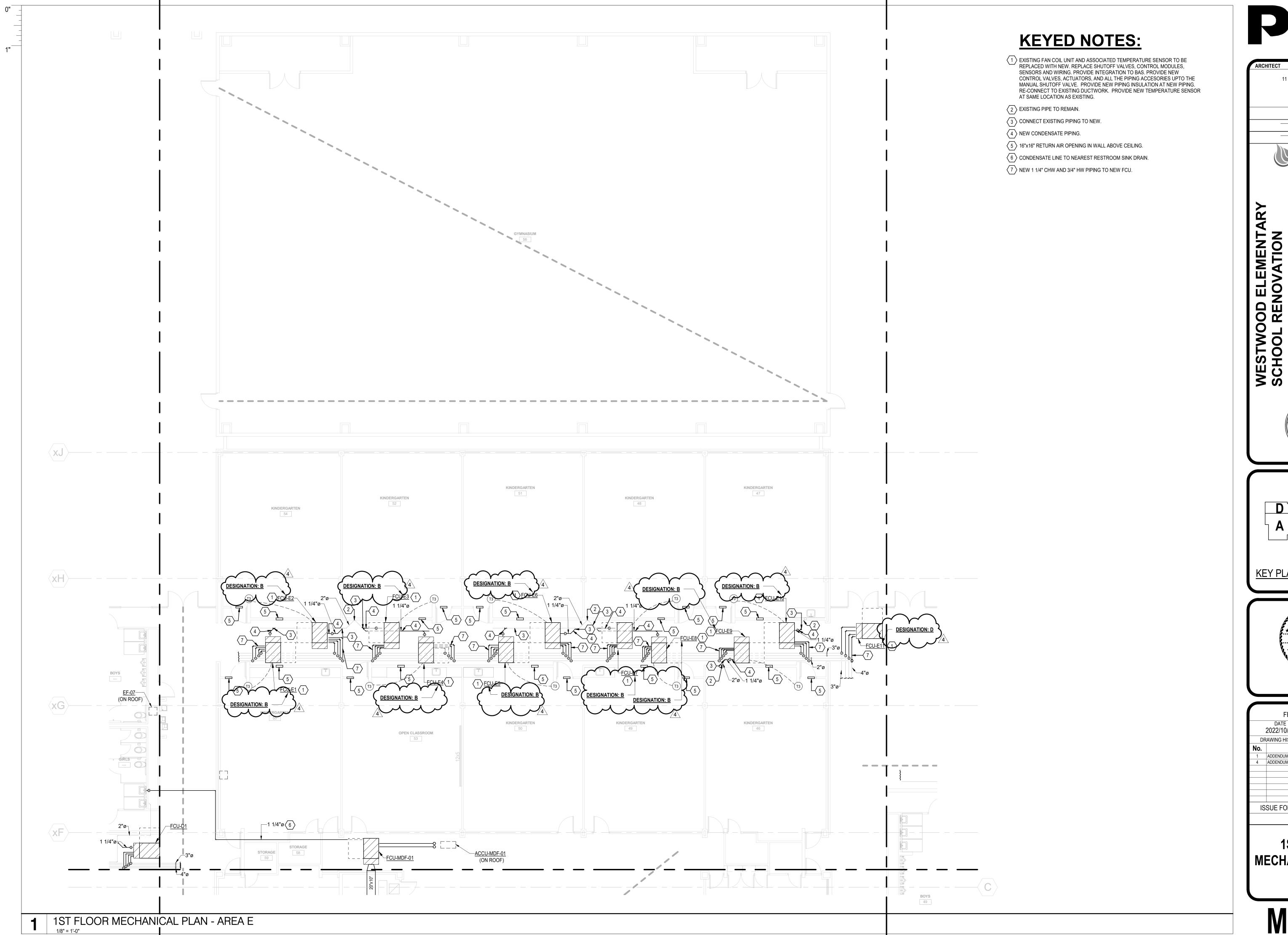
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ARCHITECT	PBK Archit
	HOUSTON Greenway Plaza, 22nd Floor Houston, TX 77046 713-965-0608 P 713-961-4571 F TX Firm: BR 1608
	STRUCTURAL
	KUBALA ENGINEERS T 800 248 3674 MEPT
	LEAF ENGINEERS T713 940 3300 ENGINEERS
WESTWOOD ELEMENTARY SCHOOL RENOVATION	506 W EDGEWOOD DR, FRIENDSWOOD, TX 77546





1ST FLOOR MECHANICAL PLAN -AREA C

11/1/2022 4:47:05 PM



CHECKED BY:

DRAWN BY:

Plot Stamp:

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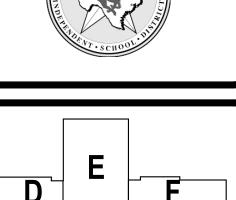
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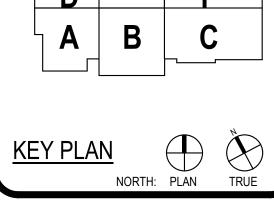
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Houston, TX 77046
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713-961-4571 F
TX Firm: BR 1608

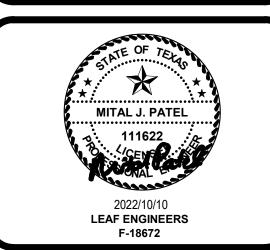
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506 W EDGEWOOD DR, FRIENDSWOOD, TX 77546







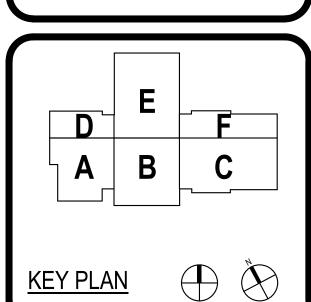
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DI	RAWING HISTORY		
No.	Descrip	tion	Date
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4	ADDENDUM 4		11/01/2022
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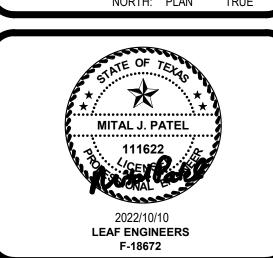
M-101E

PBK

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CHOOL RENOVATION





M-101F