



**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, 22<sup>nd</sup> 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 – 1<sup>ST</sup> FLOOR MECHANICAL PLAN – AREA B (WESTWOOD)**
  - A. Replace sheet in it entirety.
- Item No 03 **Sheet – M-101C – 1<sup>ST</sup> FLOOR MECHANICAL PLAN – AREA C (WESTWOOD)**
  - A. Replace sheet in it entirety.
- Item No 04 **Sheet – M-101E – 1<sup>ST</sup> FLOOR MECHANICAL PLAN – AREA E (WESTWOOD)**
  - A. Replace sheet in it entirety.
- Item No 05 **Sheet – M-101F – 1<sup>ST</sup> 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.**



*Melissa Turnbaugh*  
November 1, 2022

DIFFUSERS, REGISTERS & GRILLES SCHEDULE			
DESIGNATION	MODEL NUMBER	NOISE CRITERIA (NC)	DESCRIPTION
A	TITUS TDC4-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.
B	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.
C	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 CONSTRUCTION.
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.
E	TITUS TDC4-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. ALL DIFFUSER DESIGNATIONS MAY NOT BE USED ON PROJECT.

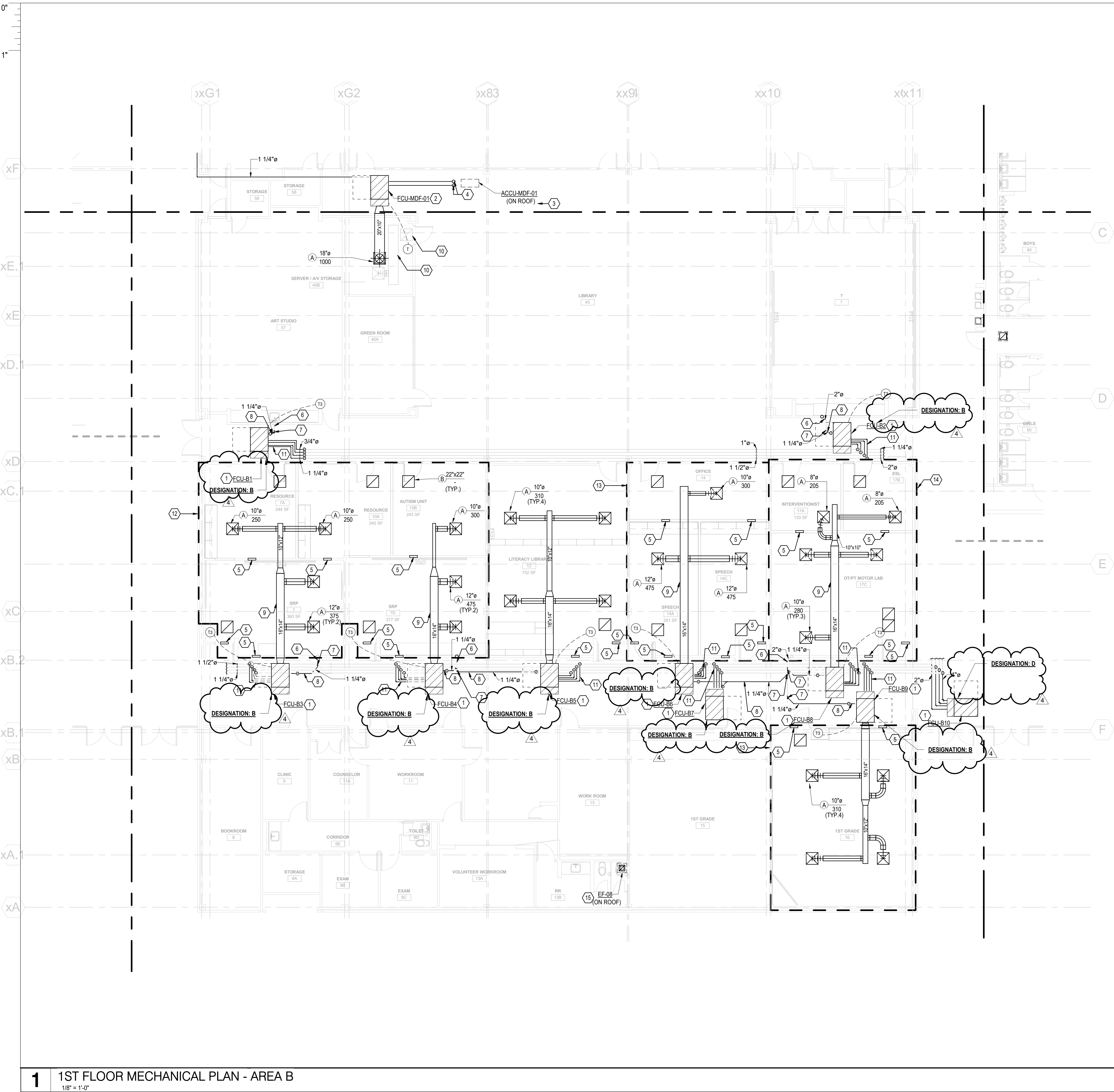
2. DIFFUSERS IN NATATORIUMS, SHOWER ROOMS, ADJACENT DRESSING ROOMS, DISHWASH ROOMS, AND THERAPY POOL ROOMS SHALL BE ALL ALUMINUM CONSTRUCTION.

3. PROVIDE ROTO-TWIST CABLE OPERATED DAMPERS AT IN GYP BOARD CEILINGS.

HYDRONIC PUMP SCHEDULE												
DESIGNATION	SERVICE	TYPE	NOTES	GPM	HEAD (FT. H2O)	EFFICIENCY	RPM (MAX.)	B.H.P.	MOTOR H.P.	MANUFACTURER	MODEL NUMBER	MINIMUM NPSHR (FT.)
SHMP-01	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
1. REFERENCE ELECTRICAL DRAWINGS FOR ELECTRICAL DATA. 2. IMPELLER SHALL NOT EXCEED 85% OF CUTWATER DIAMETER. 3. PUMP CURVE SHALL HAVE A MINIMUM OF 8 PSI DIFFERENTIAL BETWEEN 65% OF DESIGN FLOW AND 100% OF DESIGN FLOW. 4. PROVIDE VARIABLE FREQUENCY DRIVE FOR SOFT START AND BALANCING PURPOSES.												

MINI-SPLIT SYSTEM AIR-CONDITIONERS SCHEDULE	
EVAPORATOR SECTION	
INDOOR EVAPORATOR DESIGNATION	FCU-C8
SERVICE	MDF ROOM
MANUFACTURER	LG
MODEL NUMBER	LHN
TYPE	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	3.9 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/PHHZ	208 / 1 / 60
MCA	32.0
MOCP	40
REFRIGERANT	R-410A
AMBIENT TEMPERATURE °F	95°F
WEIGHT (LBS.)	250
NOTES	
1. 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.	
6. INDOOR UNIT IS POWERED BY THE OUTDOOR UNIT. INTERCONNECTING POWER WIRING FROM OUTDOOR TO INDOOR UNIT IS BY ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS.	
7. PROVIDE MATCHING CONDENSING UNIT FROM SAME MANUFACTURER.	
8. 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.	

# M-501



KEYED NOTES:

- 1
- EXISTING FAN COIL UNIT AND ASSOCIATED TEMPERATURE SENSOR TO BE REPLACED WITH NEW. REPLACE SHUTOFF VALVES, CONTROL MODULES, SENSORS AND WIRING. PROVIDE INTEGRATION TO BAS. PROVIDE NEW CONTROL VALVES, ACTUATORS, AND ALL THE PIPING ACCESSORIES UP TO THE MANUAL SHUTOFF VALVE. PROVIDE NEW PIPING INSULATION AT NEW PIPING. RE-CONNECT TO EXISTING DUCTWORK. PROVIDE NEW TEMPERATURE SENSOR AT SAME LOCATION AS EXISTING.
- 2
- NEW DUCTED MINI-SPLIT SYSTEM SUSPENDED FROM STRUCTURE. PROVIDE INSULATED AUXILIARY DRAIN PAN WITH CONDUCTIVITY SENSOR. REFER TO DETAIL.
- 3
- AIR-COOLED CONDENSING UNIT ON ROOF. SIZE REFRIGERANT PIPING PER MANUFACTURER RECOMMENDATION.
- 4
- REFRIGERANT PIPING UP TO AIR-COOLED CONDENSING UNIT ON ROOF.
- 5
- 16"x16" RETURN AIR OPENING IN WALL ABOVE CEILING.
- 6
- EXISTING PIPE TO REMAIN.
- 7
- CONNECT EXISTING PIPING TO NEW.
- 8
- NEW CONDENSATE PIPING.
- 9
- IF RESPECTIVE ALTERNATE IS ACCEPTED, ALL ASSOCIATED DUCTWORK, RETURN AIR OPENINGS, AND AIR DEVICES TO BE REPLACED WITH NEW.
- 10
- EXISTING FLEX DUCT, SUPPLY AND RETURN AIR DEVICES TO BE DEMOED. CAP EXISTING TAP.
- 11
- NEW 1 1/4" CHW AND 3/4" HW PIPING TO NEW FCU.
- 12
- ALL WORK WITHIN THE BOX SHALL BE PART OF ALTERNATE NO. 8.
- 13
- ALL WORK WITHIN THE BOX SHALL BE PART OF ALTERNATE NO. 9.
- 14
- ALL WORK WITHIN THE BOX SHALL BE PART OF ALTERNATE NO. 10.
- 15
- NEW CEILING MOUNTED EXHAUST GRILL AND DUCTWORK UP TO EXHAUST FAN. REMOVE EXISTING LAYIN CEILING EXHAUST DIFFUSER.

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SCHOOL RENOVATION

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ISSUE FOR PROPOSAL

STATE OF TEXAS  
MITAL J. PATEL  
111622  
LEAF ENGINEERS  
F-18672  
2022/10/10

CLIENT  
FRIENDSWOOD ISD  
DATE  
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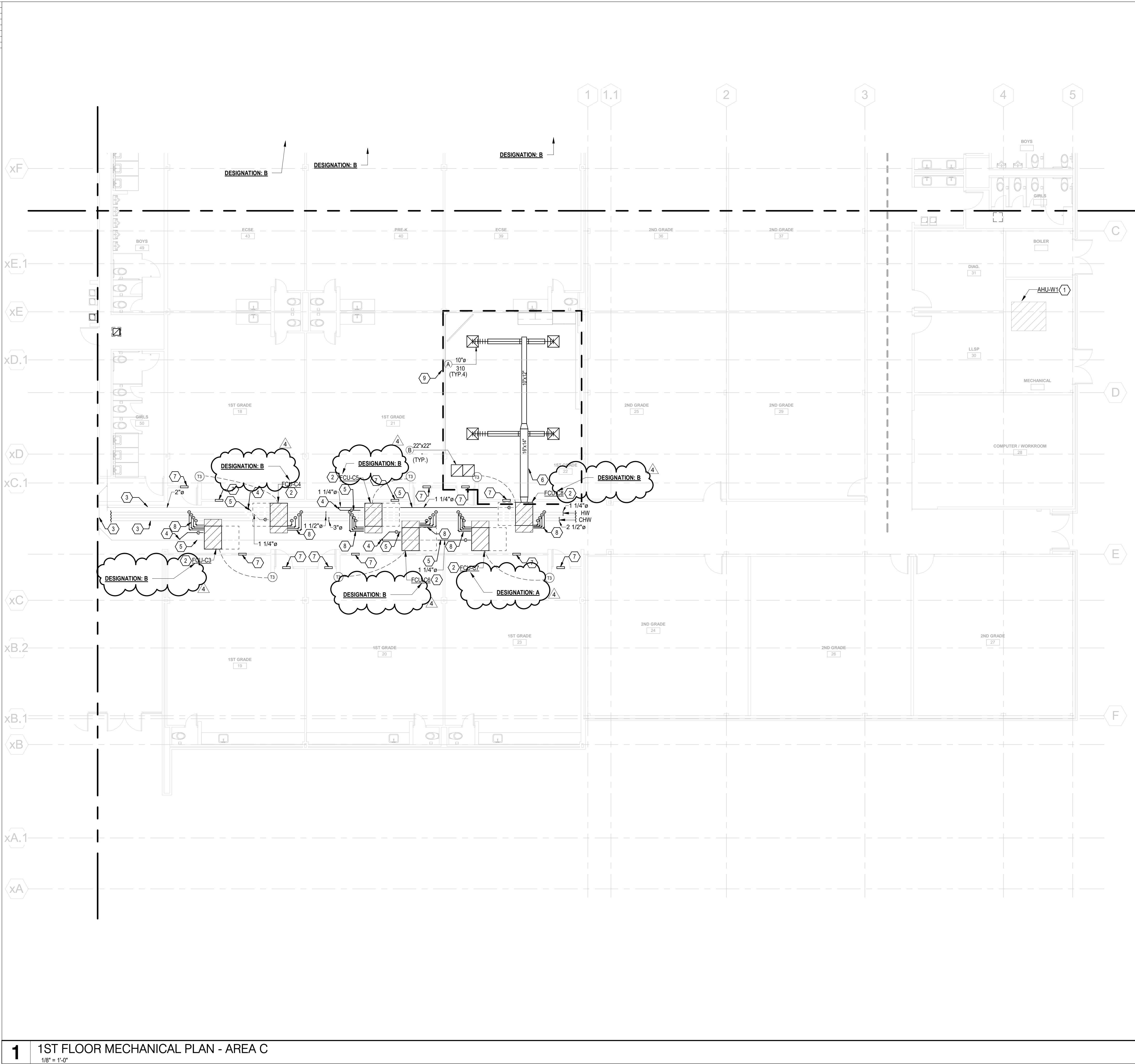
DRAWING HISTORY

No.	Description	Date
1	ADDENDUM 1	10/24/2022
4	ADDENDUM 4	11/01/2022

ISSUE FOR PROPOSAL

1ST FLOOR  
MECHANICAL PLAN -  
AREA B

M-101B



KEYED NOTES:

- 1

EXISTING AIR HANDLING UNIT AND ASSOCIATED CONTROLS TO REMAIN. REPLACE EXISTING CHILLED WATER CONTROL VALVE WITH NEW AND PROVIDE NEW ACTUATOR, WIRING AND INTEGRATION TO NEW CONTROLS SYSTEM. REFER TO EXISTING AIR HANDLING UNIT SCHEDULE FOR CONTROL VALVE SIZE.
- 2

EXISTING FAN COIL UNIT AND ASSOCIATED TEMPERATURE SENSOR TO BE REPLACED WITH NEW. REPLACE SHUTOFF VALVES, CONTROL MODULES, SENSORS AND WIRING. PROVIDE INTEGRATION TO BAS. PROVIDE NEW CONTROL VALVES, ACTUATORS, AND ALL THE PIPING ACCESSORIES UP TO THE MANUAL SHUTOFF VALVE. PROVIDE NEW PIPING INSULATION AT NEW PIPING. RE-CONNECT TO EXISTING DUCTWORK. PROVIDE NEW TEMPERATURE SENSOR AT SAME LOCATION AS EXISTING.
- 3

EXISTING PIPE TO REMAIN.
- 4

CONNECT EXISTING PIPING TO NEW.
- 5

NEW CONDENSATE PIPING.
- 6

ASSOCIATED DUCTWORK, AIR DEVICES AND TEMPERATURE SENSOR TO BE REPLACED WITH NEW.
- 7

16"x16" RETURN AIR OPENING IN WALL ABOVE CEILING.
- 8

NEW 1 1/4" CHW AND 3/4" HW PIPING TO NEW FCU.
- 9

ALL WORK WITHIN THE BOX SHALL BE PART OF ALTERNATE NO. 10.

ARCHITECT

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KEY PLAN

D

E

F

A

B

C

NORTH: PLAN

TRUE

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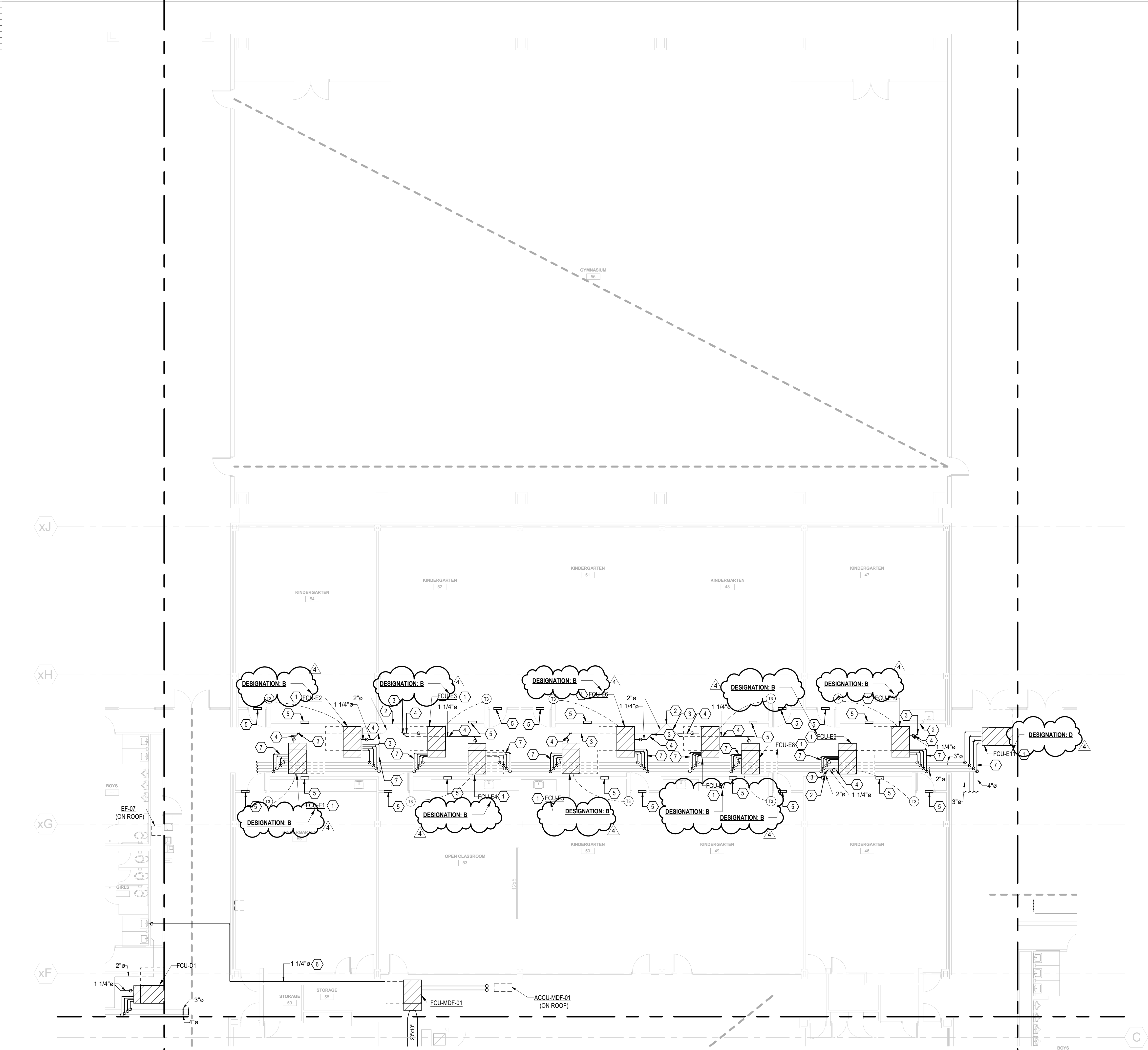
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ISSUE FOR PROPOSAL

1ST FLOOR  
MECHANICAL PLAN -  
AREA C

M-101C



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- 2 EXISTING PIPE TO REMAIN.
- 3 CONNECT EXISTING PIPING TO NEW.
- 4 NEW CONDENSATE PIPING.
- 5 16"x16" RETURN AIR OPENING IN WALL ABOVE CEILING.
- 6 CONDENSATE LINE TO NEAREST RESTROOM SINK DRAIN.
- 7 NEW 1 1/4" CHW AND 3/4" HW PIPING TO NEW FCU.

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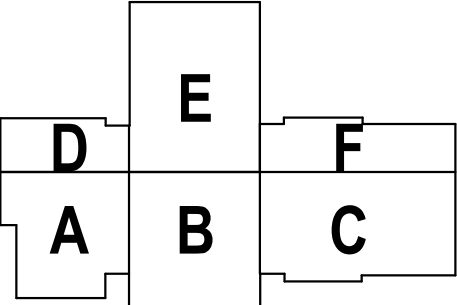
WESTWOOD ELEMENTARY

SCHOOL RENOVATION

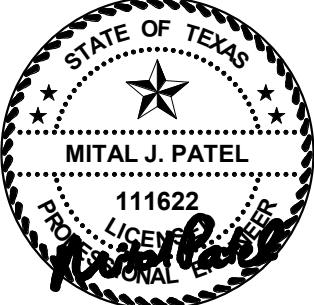
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ISSUE FOR PROPOSAL



KEY PLAN  
NORTH: PLAN TRUE



2022/10/10  
LEAF ENGINEERS  
F-18672

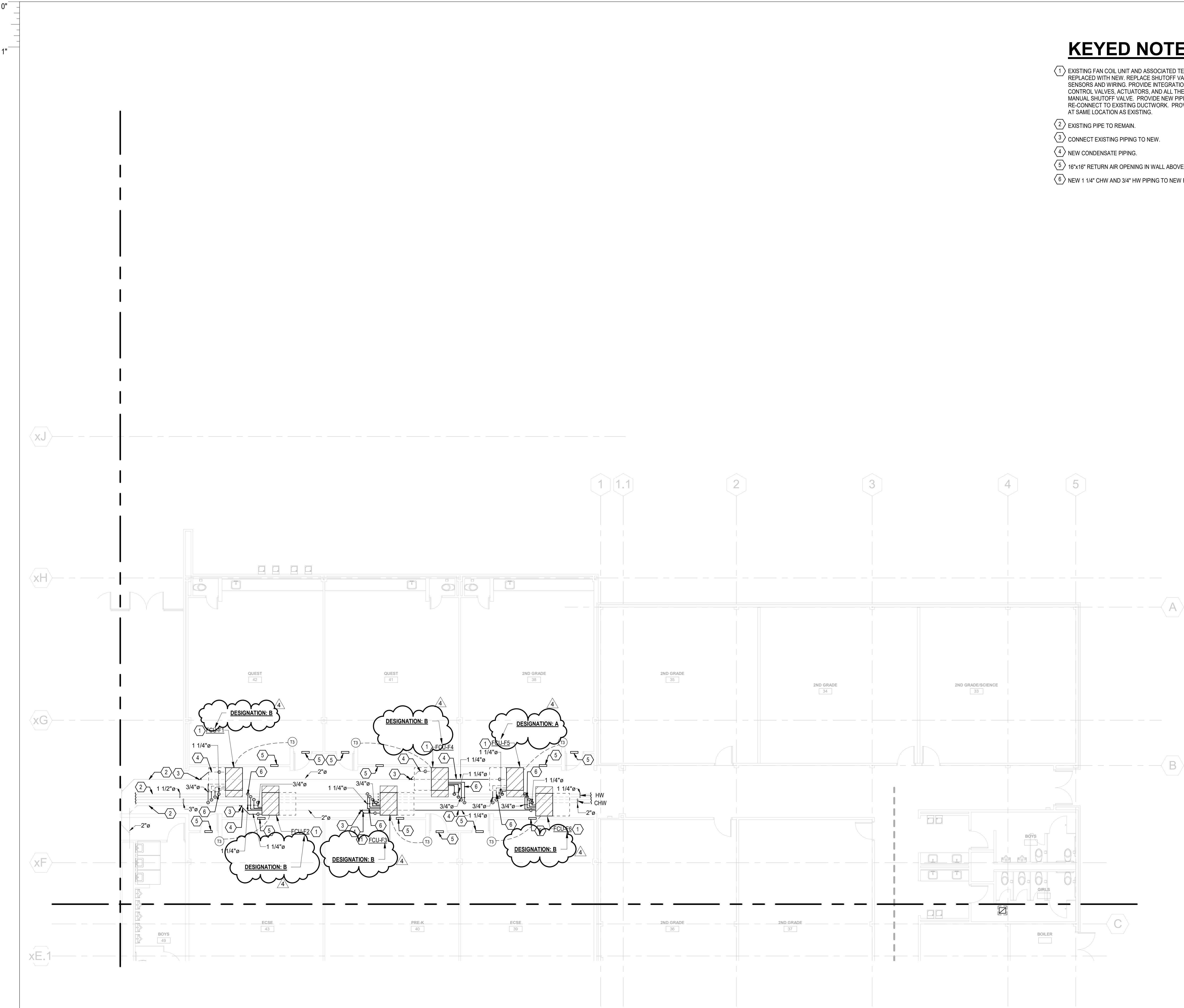
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ISSUE FOR PROPOSAL

1ST FLOOR  
MECHANICAL PLAN -  
AREA E

M-101E



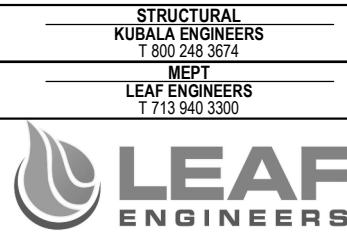


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- 2 EXISTING PIPE TO REMAIN.
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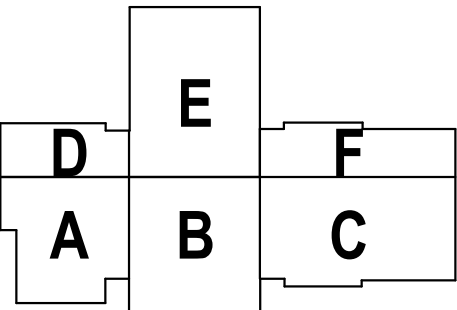
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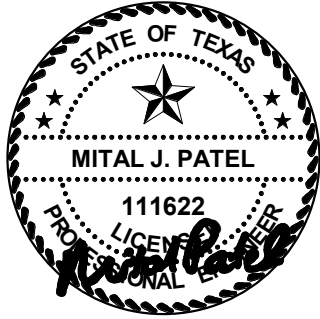
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KEY PLAN



2022/10/10  
LEAF ENGINEERS  
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1ST FLOOR  
MECHANICAL PLAN -  
AREA F

M-101F